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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS



THE NEW ECONOMIC WORLD AND THE NEW
ECONOMICS

RICHARD T. ELY

THE SAN FRANCISCO CONDEMNATION CASES

WALTER J. HERRMAN

TRADE UNIONS IN THE ELECTRIC INDUSTRY

CHARLES F. MARSH

LAND RECLAMATION IN PERU

C. W. SUTTON

REGULATION OF INTERSTATE TRANSMISSION

T. C. BIGHAM

TAXATION OF RAILWAYS IN CANADA

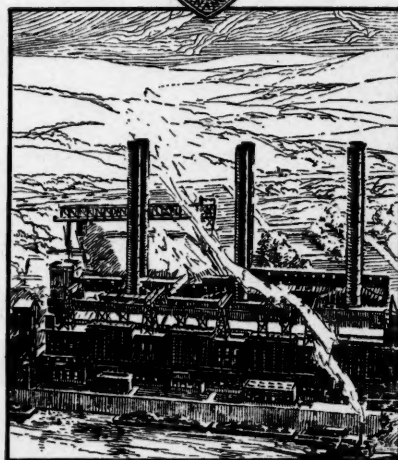
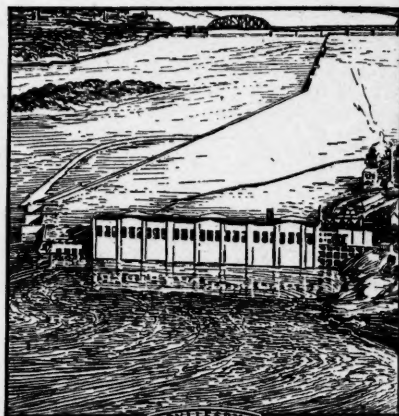
HERBERT E. DOUGALL

LABOR RELATIONS OF PUBLIC UTILITIES

E. W. MOREHOUSE

What is *Accomplished* by Large Industrial Units

THE advantage to the consumer of large industrial units is exemplified in the electric light and power industry Through the holding company plan great plants and transmission systems have been built which have brought service to 4,000 additional communities in the past 5 years In this period electricity was supplied to at least 7,000,000 additional homes While the general price level of commodities remained high, the price of electricity to the consumer was sharply reduced Only by large corporate and operating units could these results have been accomplished The gas industry, also, is an obvious demonstration of mass production and distribution



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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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THE NEW ECONOMIC WORLD AND THE NEW ECONOMICS¹

By RICHARD T. ELY

IN the early 80's of the last century a good deal was said about the "new economics". One widely read journal of the period echoed a common sentiment in the words, "A new world needs a new political economy". Political economy was then a word more generally used than economics. It is true that we had a new economics in the early 80's and this new economics found expression in the establishment of the American Economic Association in 1885. The economics of the period, as represented by the young leaders who established the Association, may not have been so revolutionary as many thought at the time. Whatever else is or is not true, it is true that the birth of a fuller life came into the body of economics at that time. A quickening process was evident; a new spirit manifested itself in many different directions. Economics was no longer held to be a rounded-out and developed body of economic certainties. The leaders in the new economics at that time were eager and enthusiastic to discover new truth, and the unknown but know-

able appeared to be a vast ocean along the shores of which a few pebbles of truth had been picked up. Those of us who formed the American Economic Association and who stood for the new economics in 1885 may feel now that our work was crude and in many respects it was. But the new economics represented life.

In reading these volumes on *Recent Economic Changes* I find the conviction growing upon me that in a certain sense we do have a new economics. The economics of 1929 is a continuous evolution from 1885 but we do have new achievements in the supply of data, in the technique of using these data, and in their critical analysis. We also have an extension of researches into new fields especially into land economics

¹ The present article began simply as a review of *Recent Economic Changes in the United States* (2 vols.), a Report of the Committee on Recent Economic Changes, of the President's Conference on Unemployment; New York: McGraw-Hill Book Company, 1929. pp. xxx, 950. \$7.50. It has grown until it is more than a review. It has become an article based upon the work under consideration.

and public utilities, although these two fields have received little attention in the present volumes. The various authors who have written the different chapters making up these volumes are impressed with the necessity for the extension of research in order to discover the truths that are needed for our guidance. Nowhere does one come upon a statement harking back to the dogmatism and absolutism that characterized the earlier English and American writers of the middle of the last century. J. B. Say early in that century said that economists are not eager for facts. The writers of these volumes are one and all most eager for facts. John Stuart Mill wrote, about the middle of the last century, that little further was to be done with respect to the theory of value; it had all been worked out.² A statement like that is not to be found in these two volumes.

The writers of these volumes do not represent a new economics to the extent that Adam Smith's *Wealth of Nations* was a new economics, nor do they stand for any real departure from the animating purposes and ideas of the founders of the American Economic Association. But in their careful, painstaking scrutiny of facts and in their use of statistical devices and technique, to a large extent really new, they sum up past achievements and give us a splendid start for new achievements.

The economists now want to know the facts and all the facts, so far as may be, which underlie their generalizations. In their desire to know the facts and to build upon them they do not differ from the economists who founded the American Economic Association. But they have the facts at their command in such

abundance and so well ordered that they rely less upon personal impressions and individual observations than their predecessors were compelled to do. Taking it all in all, we may say that we have in 1929 a new economics; but this new economics is simply an evolution and the early economists would not like to feel that their writings are not part and parcel of it.

The words of Owen D. Young, as quoted in the *Review of Reviews* for December, 1927, might have been used as a motto for the committee of economists who wrote *Recent Economic Changes*. Mr. Young says,

"Facts can be applied in any field. Our curse is ignorance. Facts are our scarcest raw material. This is shown by the economy with which we use them. One has to dig deep for them, because they are as difficult to get as they are precious to have . . .

"I shall be happy if we can substitute the calm findings of the investigator for the blatant explosions of the politicians."

Neither the founders of the American Economic Association nor the writers of *Recent Economic Changes in the United States* have ever supposed that the mere gathering of facts has scientific significance. Facts can be gathered indiscriminately for a century and we will be little wiser by reason of this gathering of facts. This is simple enough; but there has been a good deal of misunderstanding by critics of the new economics from the time of the German Historical School to the present.

Critics of the German Historical School call attention to the deductions and generalizations of the historical economists and to the resemblance in many particulars between their works and those of the Classical English School; but this criticism is on the whole praise. It is by generalizing and interpreting the facts that we get conclusions of real significance for practical life and for science as

²"Happily there is nothing in the laws of value which remains (1848) for the present or any future writer to clear up. The theory of the subject is complete." *Principles of Political Economy*, Bk. III, Ch. I, Sec. 1.

well. We have to act upon general principles. What the new economics has always insisted upon is that we should test these generalizations and ascertain the degree to which they correspond or do not correspond to the facts of life. The new economics believes in hypotheses in research and then revised hypotheses. Some times there may be a little too much hesitation in reaching generalizations. The feeling has often been expressed that what we need now is synthesis, which means gathering together and interpreting the facts. We do find in this work a few generalizations, but cautious ones.

Our Institute for Research in Land and Public Utilities has followed this plan. The idea has been to gather together existing knowledge, interpret it cautiously and then to conduct researches in order that we may go forward to new and better generalization. We have been criticized because in our early mimeographed volumes, *Outlines of Land Economics*, we stated certain conclusions. It was said that we should have waited until we had finished our researches and then given our conclusions. If this had been done, no conclusions or generalizations would ever have been reached because researches must be continuous and never-ending. Even if we reached perfection in generalization on the basis of facts at a given moment—and this is in the nature of things impossible—we should need to continue our researches because evolution like life never ceases and the situation that exists now is something that the world has never seen before and never will see again. The new economics has an open mind and continually revises and re-revises conclusions and in this way furnishes the best basis for action. Facts that are insufficient for sweeping generalizations or scientific "laws" may be most useful in

framing economic policies, public and private. The search for more data and the testing of hypotheses may go on at the same time that these policies are being carried out.

Striking resemblances are evident between the economics of 1885 and the economics of 1929. In each we find a warm humanitarianism. The leaders in both periods discovered acute distress, and the earlier writers, like the later, wanted economics to be used as a means of human improvement. One hardly dared to express the hope in 1885 that poverty could be abolished because that sounded too sentimental and Utopian; but in recent years we even dare to say that we have this hope, having derived courage from the statement of Alfred Marshall that one aim of economics is to help abolish poverty. This statement would scarcely seem daring to the writers of the volumes under consideration.

There is a refreshing realism in the writers of both periods, looking facts squarely in the face. That, for example, is found in the chapter on agriculture written by Dr. Edwin G. Nourse who is as eager as anyone to see an improvement in the condition of the farmers of this country; but carefully weighing the facts he is compelled to use these words:

"In spite of faith in the ability of our farmers eventually to work themselves out of this situation, the prospect of swift or comprehensive relief of the situation does not seem bright. Individuals are showing their ability to make profits, and some localities are conspicuously prosperous. But there does not seem to be in prospect any such sweeping rise of prices or decline of production costs as will take care of the badly-located or less efficient producer or of the section which finds itself maladjusted to the present trend of economic developments. Basic difficulties have not been removed yet, whereas new complications are continually being thrust into the situation."

The leaders of the economics of the 80's were not, and the economists of the present period are not, afraid to try to be interesting. Their writing may seem dull to many; but at any rate they write in an attractive style and seek to interest large circles of intelligent people in economics. In both periods the representative writers desire to avoid sensationalism and exaggerated statements; but they also want their appeal to be popular. Probably there is less dread now than formerly of the epithet "popularizer".

At the present time economics is new, as contrasted with the economics of the latter part of the last century, because we now have at our disposal so many more facts of significance. In 1885 statistical laboratories hardly existed. I am not sure that there was one in 1885 in an American university, and I am certain that in no American university in 1885 was there a professor of statistics giving his time and strength to statistical research. Reports of great corporations did not offer available and satisfactory data. Census material was less abundant then than now. The Bureau of the Census has had the advantage of scientific methods, of scientific men in its staff to a greater extent than in the last century and has very great superiority in technical apparatus. In short, we have a vast and growing mass of facts which we must master as a basis of our reasoning and the formulation of principles. As already stated synthesis is felt now to be needed, but it is far more difficult than it was in 1885. In 1885 the motto that appealed to the writers of that period was "Look and See". They looked into history; they sought such facts as statistical bureaus had made available and they wanted to test principles by observation. Our present world is a new world, and it is new in higher degree

than the economics of 1929 is new. We have now masses of facts and new economic relations of vast significance. And after all, it is with human relations of an economic kind that we deal in economics, although we do find lingering on older concepts of economics from which we are escaping.

One striking, but possibly slightly exaggerated, statement in the Report of the Committee characterizing the years 1922-1929 is that the changes that have taken place "have not been in structure but in speed and spirit". This is well illustrated in the following quotation:

"... Invention is not a new art. Transportation and communication are not new services. The facilitating function of finance is older than coined currency. Agriculture is as ancient as history. Competition is not a new phenomenon. None of the changes in distribution on which emphasis has been laid in the last few years is basically new. Hand-to-mouth buying is old; sudden changes in style and demand are familiar; there is no new principle in installment selling; cooperative marketing is no modern discovery; the chain store movement dates back at least 25 years,³ but the breadth and scale and 'tempo' of recent developments give them new importance.

"The increased supply of power and its wider uses; the multiplication by man of his strength and skill through machinery, the expert division and arrangement of work in mines and factories, on the farms, and in the trades, so that production per man hour of effort has risen to new heights; the quickening of these instrumentalities through capital provided from the surplus incomes of a constantly widening proportion of our people—all these represent an accumulation of forces which have long been at work."

The foregoing quotation is impressive but does it not contain at least a slight understatement? Have not the changes in speed and spirit necessitated changes in structure? What is brought before us

³ See Chap. V, Marketing.

is the difference in degree that amounts to a difference in kind; for, after all, our life is a new life when it comes to the recent economic changes. In the latter part of the last century monopolies and trusts attracted attention and were made the subject of economic research. Now we hear less about monopolies and we hear more about competition. We discover a development of forces in the economic field which warrants the expression used by the writers of this treatise and by others, "the new competition", and we also find, referring back to what has been said about statistics, the expression, "the new statistics". The extension of association, the spread of collective economic action, the growing sphere of urban economic life, the relative decline of the influence of agricultural leadership, the relationship of forces and organizations and in fact of all human relations with which we deal in economics presents such a different pattern from that of 1900 that we may say with a good deal of accuracy that once more we live in a new economic world and once more we need a new economics. Surely the business man who does not realize that our world is a new economic world is going on the rocks of bankruptcy. As never before the business leader must be alert and must watch from day to day shifts in relationships.

As this new competition is one of the most outstanding features of the new economic world it may be well to say a few words more about it in this place. Professor Wesley Mitchell says truly in *Recent Economic Changes* this:

"In a sense every consumers' good, from college to candy, is a rival of every other consumers' good besides being a rival of the savings bank." (p. 875.)

But the best succinct account I have seen of the new competition is that given

by my associate in the Institute, Dr. Herbert B. Dorau, in his paper on "The New Competition and How the Gas Industry Must Meet It." What he says is important enough to justify quotation at some length:

"Competition which was once described as 'the struggle of two grocers on the same street to sell a woman a can of beans' is now much less tangible in character and far more complex in form. It is true, as recently pointed out that, 'the day is over when a man can see his competitor.' It may be added that he is fortunate if he even knows who his competitors are. But more than that, competition used to operate to determine where one bought; now it operates largely to determine what one buys. The new competition is but the old business force raised to a higher and more intense plane of effectiveness. As soon as common interests in any group outgrew the important differences among the units constituting such a group they combined for more effective action against a common antagonist. Should others then not do likewise and combine in defense of common interests, they could not hope long to maintain the previous balance. Once started such a change almost brought itself about, for those first organized into these non-competing groups could only be coped with by others doing likewise and organizing to limit the range and scope of their competition. Those in similar undertakings thus gain greater strength to face the new competition from the outside. There was a time when lumber producer competed with lumber producer, but now in the new competition emphasis is on the competition of the lumber producers as a group with the brick producer, the stone producer, and the cement and fabricated building materials producer.

"The new competition raises up industry against industry and class against class. The laborer's worst competition today is no longer other labor but the substitutes for labor. Once competition was among like things or services in the same markets; now competition is among unlike products or services in the same markets. Seemingly as competition has been eliminated within any market among producers of very similar or like products it has broken out with additional vigor among producers of different

products intended to serve the same general need. Thus on every hand we are exhorted to eat more wheat, more raisins, more apples, more citrous fruits, more prunes, and so on through the entire range of foodstuffs even down to the staff of life itself whose existence seems also threatened for it cries out 'eat more bread, it's your best food.' Choose among them we must for our doctors tell us we already eat too much.

"The new competition finally and ultimately resolves itself into an intense battle for the maximum obtainable share of the consumer's purchasing power, and not satisfied with the results of the struggle even on this plane, it now even becomes necessary to attach part of the customer's future purchasing power by the extended payment plan if one is to get a share at all. Those who assume to wait until the customer has saved and expect him to spend what he has accumulated will rarely make large sales. When 75% of the automobiles are sold on time and even larger proportions of other classes of goods so handled, the dictate of the new competition seems to be clearly that the customer's purchasing power must be anticipated and tied up before he has his income in hand. Thus has all business become a competition of all other business and the gas industry has not been exempt from the effects, in fact from an economic standpoint its status has been most distinctly changed.

"While competition was on the simple plane of the competition of like and like it was proper to refer to the gas business as a monopoly, but now like all other things gas is in more or less direct competition with everything that is sold . . . Among the smallest consumers in the large urban centers, electric cooking has begun an invasion which at least demands attention."⁴

As we read economic writings we notice how gradually leaders of economic thought are escaping from dogmatism with a growing open-mindedness. We dare to say more and more frequently "we don't know". Contrast the present position with the popular thought of the 80's of the last century when the statement that one was an economist was apt

to be followed by the question, "Are you a free trader or a protectionist?" One had to be either the one or the other absolutely, and when the young economist of that period imbued with the spirit of research and relativity replied, "I am neither one nor the other", he was looked upon with doubt and suspicion. He either must be very ignorant or he must be afraid to avow his opinions. Modern economists in America in the last century got away from the dogmatism of free trade; but other dogmatisms lingered on. Conclusions were reached upon an inadequate basis of facts, because the facts were not available or because they were not as fully utilized as they might have been. I must frankly confess to a formulation of certain principles in some of my earlier writings in regard to monopoly and the field of monopoly and the field of competition which now appear to be unwarranted dogmatism. There was a basis of facts and a large basis; but it now appears an inadequate basis.

A dogmatism that still lingers is the Ricardian view of rent and his theory of the distribution of wealth. Relatively little research has been done in the field of land utilization and consequently in most economic treatises little progress can be recorded in the treatment of rent. Even in very recent treatises the statement is found that an increase in population means an increase in the rent of land, whereas one of the most startling phenomena of our time as well as one of the most disturbing is the fall in the rent of agricultural land which has been coincident with the growth of population. Moreover, even very recent discussions assume a continued increase in population, whereas another striking fact of the present century is the fall in the rate of growth of population in all parts of the world that

⁴ Compare with this the illuminating article on "The New Competition" by O. H. Cheney, in the *Nation's Business*, June, 1926.

belong to the regions of European civilization.

It does not take much research to show that two antagonistic forces are at work regulating fundamentally the rent and the selling value of land. On the one hand, we have improvements in the utilization of land making a given area accomplish larger purposes and, on the other hand, we have the growth in population. Current researches establish clearly that the improvements in the utilization of the land far more than offset the growth in population so far as agricultural land is concerned, whereas we do not have sufficient researches to give us the clear knowledge that we would like to have in regard to urban land values. In the meantime the old Ricardian dogmatism lingers even among modern economists. I recall well a remark made to me by Allyn A. Young, not so long before his death, in which he used somewhat these words, "How long it has taken us economists to get over the obsession of the Ricardian theory of rent!"

Nevertheless, one of the striking facts in the present work is its absence from dogmatism and the evidence of a willingness to go ahead and state the truths revealed by research.

Researches with respect to the utilization of land show us that by and large we come by what unaided nature furnishes with constantly decreasing human costs, whereas John Stuart Mill and the classical economists of his day believed that man must make increasing sacrifices in human effort to provide himself with food and raw materials. Land is looked upon by the economists just mentioned as a good of increasing scarcity; but, as a matter of fact, at the present time it is more abundant in the economic sense than ever before and the abundance promises to increase in the future. Rel-

atively less and less effort seems necessary to obtain in usable form the manifold services of nature. Into all this we cannot enter here and now, although it would be both interesting and instructive to examine critically the statement that land as such is increasingly handed to us as a free gift and that in many cases along with the gifts of nature come gifts of men's toil. What does it signify, for example, that what is offered to the new farmer without cost, and not infrequently to the dweller in the city, is not only what nature has done for man, but a surplus in the accumulation of past toil with the result that the newcomer is better off than his immediate predecessor, too often a bankrupt, and far better off than the pioneer in more ways than have received treatment in our economic textbooks?

Dr. Gries in his excellent chapter on "Construction" gives an illustration of what has just been said, although he does not bring out the implications of his illustration. He speaks about improvements in housing that are constantly going forward and the higher standards that seem to pervade all classes except the very poorest. He uses these words:

"Owing to the desire of well-to-do families to move into more modern quarters, families less well-to-do may in effect receive a subsidy through their ability to obtain second-hand houses at a discount greater than actual depreciation. A problem may arise as to the use of land now occupied by the poorer types of houses which are now being vacated."

Recent economic changes have brought about such a condition that in very many cities—large cities and especially smaller and medium-sized ones that have not grown—one can buy a building site for a good deal less than it cost to produce it. The price of a building site and house together sometimes does not equal 50% of the actual cost of production. The

population has not grown in many places. Two things have happened. Newer styles render older houses and sites, especially houses, obsolescent, and in some cases we may say obsolete, while improvements in the utilization of land, if we take a given area, render constantly increasing services. The site of a single-family house, that provided shelter for a family of four or five people, becomes the site of an apartment building, sheltering 50 to 100 and at times even more people.

Perhaps no chapter in these volumes reaches a higher degree of excellence than chapter nine on "Price Movements and Related Industrial Changes" by Professor Frederick C. Mills. It may also be added that the high quality of work of the National Bureau of Economic Research is impressed upon the reader of this chapter, not only on account of the work already accomplished but on account of work which is begun and which is described by Professor Mills.

The price movements of the present century and the latter part of the 19th century show clearly the causes of the farmer's prosperity up to and through the World War as these causes are found in price movements. Farm products continued to increase in price from 1896 to 1913 more rapidly than any other commodity group. The annual rate of increase of prices of farm products amounted to 3.4%. It was a time when the money incomes yielded by farms were continually increasing and consequently a time when farm land values were likewise increasing with rapidity. Raw minerals, like farm products, increased more rapidly than processed materials and products into which labor entered more largely. The cost of living rose,⁵ during 1896-1913, 1.9% annually.

⁵ Paul H. Douglas is the authority quoted for this and the following figures in this paragraph.

"Foods were becoming dearer and non-foods cheaper in relative terms" (p. 625). Earnings of all groups of employees were increasing at a rate of 2.4% a year. While the gains of labor in real wages were not striking, they did increase "at a rate of one-half of 1% each year representing a slow but sustained improvement in well-being" (p. 626).

This era was one of general prosperity—farmers were gaining, the factory operators were gaining generally, wage earners were gaining. Was there any class of men who were not gaining? Did all this prosperity represent simply increased production? The gains in income of those classes whose prosperity is indicated by the data in this chapter were to some considerable extent at the expense of all those whose incomes were either fixed or changed slowly. Those who received interest on fixed investments suffered during this period and so did salary workers, as is well known to the employees of American universities. Only gradually did salaries advance and alleviate painful experiences of academic families, but other classes in the community suffered quite as much, as their incomes did not advance at all because they came from interest on long-time investments and annuities of one form or another.

All this was brought out long ago by Professor John B. Clark and especially Professor Irving Fisher in what they wrote on money and interest.

Price movements given for the period since 1920 reveal equally the causes of the farmer's distress as these causes are reflected in prices. As farm products fall in price from the high peak the land values go down. Rents from 1922 to 1927 remained stationary and realty values decreased as shown at an average annual rate of 0.1%. While farm products have increased somewhat in price

during the period since 1920, the distress of the farmer continues. The causes of these price movements are not adequately presented. In the case of landed property, especially farm land, past high selling values based upon past high prices of products are reflected in mortgages which now mean a crushing load to the owners of the land and, in many cases, these commitments of the past more than equal present selling values. This is brought out by Professor Nourse as far as agricultural land is concerned.

Researches that find expression in this present work are not so new as is the spirit of the work. A good deal of it consists of restatements of research-results that have already appeared in print and it is to some extent an inventory of past achievements. Even so, it is a great service to get together systematically all these chapters—they give a splendid starting point for new researches.

It would not be worthwhile to go over all the chapters in the present work and criticize them one by one. Indeed, according to my opinion there would not be very much to criticize. The work is one which every student of economics should read and also every intelligent man—to say nothing about the "intelligent" woman, so-called by George Bernard Shaw in his latest book on socialism. One or two topics may, however, profitably receive a little further consideration.

The treatment of unemployment is something not absolutely new but it certainly is new in the significance attached to it. The present unemployment is called "technological". The unemployment in England in the latter part of the 18th century, when the Industrial Revolution was getting under headway and was driving men from the land, was technological. It is the question of degree that gives significance to

the present technological unemployment and emphasizes it as never before. Prosperity for the many is reflected in the unemployment of large numbers of people. We have also here a problem that deserves far more consideration than it has ever received, namely, the relation of age to efficiency. In all of the great economic convulsions that take place it is comparatively easy for the young to make readjustments but not for the middle-aged and the old. We have here a mass of misery that one cannot well exaggerate. Happily, the writers of these volumes are not wanting in sympathy for those who are displaced. What they say reminds one of the strong emotional expressions used by French writers like Auguste Comte and Saint-Simon. They do not talk glibly about things righting themselves in the long run, although they do not have any very specific suggestions for remedying the evils found in technological unemployment. It is a great thing that they have emphasized this evil.

It is clearly brought out in *Recent Economic Changes* that the Industrial Revolution which began in the latter part of the 18th century has continued up to the present time and is now continuing with accelerated speed. This should be sufficiently obvious to all economists but nevertheless, many things that we read about the Industrial Revolution imply that it is something that has come and gone.

One cause of a needless amount of distress is that our economic policies always lag behind the stage reached in our economic evolution. By this I mean that policies are belated. They lag behind changes in economic conditions and often behind available knowledge and the best economic thought. Doubtless that has been going on wherever economic evolution has taken pace but this

lag is most conspicuous and distressing in the period of time since the Industrial Revolution began in England. People on the land were displaced on account of changes in agricultural production and in industry but the policy of laissez faire was followed producing the misery which is so familiar to all students of economic history. The lag was lessened by the labor legislation of the 19th century but still continues. A book like this should help to bring policies up-to-date but to do this in full measure means far more wisdom and determination in our public affairs and in our social policies than has been evident up to the present time.

If there is any one thing that is clear now it is the disproportion in the number on the farms and the necessity of getting a good many people from the farms and into the city and finding occupation for them. Even before the marvelous technical improvements in agriculture during the present century there was always a surplus of farm girls and boys. One of the great needs now is an educational program which will fit farm girls and boys to gain a livelihood in the city and to enable them to adjust themselves to urban conditions.

We find no legislative panacea in the treatise under review. Perhaps more could have been done, however, to call attention to the sphere of legislation. This occurs to me in connection with Professor Nourse's treatment of agriculture. Certain things must be done by public action and public action can hasten desirable processes and shorten periods of distress and misfortune. Legislation is not responsible for the ills of the farmers to the extent popularly supposed but, nevertheless, public policies have caused an immense amount of loss and suffering. Legislation established 160 acres as the size of the farms carved out of the public

domain. It is scarcely possible to exaggerate the amount of human misery caused by this mistaken policy which was based upon conditions in the Mississippi Valley. In some parts of the country, however, a farm of 2,000 or 3,000—even 10,000 acres—is the right size. In the application of the land policies in accordance with which the public domain was carved into farms with what seems now almost stupidity we find mistake following mistake and mistakes still persist as has been well pointed out by Professor B. H. Hibbard in his book, *A History of Public Land Policies*. Taxation, which is a public policy, is also mistaken. Our system of taxation is far out of date and produces continuous loss. Many farmers are losing all on account of mistaken tax policies. This is only one cause of distress but it is one of significance and we are doing surprisingly little to bring about a change.

Public policy in the United States encouraged disproportionate agricultural production. In every way men were encouraged to go on the farm and no thought whatever was given to the proper balance in the productive forces of our country. All that legislation can do is limited but that limited action is essential. In my opinion this is not properly brought out in this work.

One of the noticeable features in these volumes is the emphasis laid upon the hard work and the intelligence which has given us our present prosperity. Economic relations among men are less and less spontaneous and more and more the result of deliberate intention. Professor Wesley C. Mitchell emphasizes the fact that the prosperity we have had has been hard-won and has required a combination of the efforts of vast numbers of people. He uses these words, "Such prosperity as we have enjoyed has been earned by many-sided and strenuous

efforts in which millions of people have shared to improve our technical methods, our business management, our trade-union policy, and our general administration" (Vol. II, p. 884).

What has been said about our hard-won prosperity may well be emphasized with further quotations and references. It has come about as a result of self-conscious social activity but surely this is so little appreciated that not one intelligent citizen in a thousand knows anything about it or has even the faintest glimmering of an idea of what has taken place and has helped to maintain the degree of prosperity that we now enjoy. Dr. Gries gives an illustration from the construction industry. The following is a pertinent quotation:

"Only once since 1920 has there appeared serious danger of an inflationary boom. In the spring of 1923, new construction was being projected so rapidly that wholesale building material prices rose 10 per cent in four months. The Secretary of Commerce, in March, 1923, in reply to a request from the President, suggested that all Federal Government building not urgently required by public necessity be deferred for the time being. In April the report of the Committee on Business Cycles and Unemployment advised against pressing on with building activity at times when it would involve rapid bidding up of prices for materials and labor, and the problem was widely discussed in trade papers. The building program was safely accommodated to the capacity of the industry, and building costs have never since been so high."

However, not only the Government or public authority generally has helped to produce such stabilization as we have had and contributed to our prosperity; but also the action of innumerable private leaders in the business world. Our progress is becoming more and more a planned progress. The following is another quotation from Dr. Gries which illustrates this well.

"Relatively more construction than formerly is now definitely planned with reference to long-time growth in requirements. Construction by practically all types of public utilities, such as railways, electric light and power, gas and telephone companies, is largely non-competitive and non-speculative. This may be contrasted with the highly speculative building of various railways during the last third of the nineteenth century, which so frequently led to receivership."

We are just beginning to get an idea of planned progress; but it must go much farther than it has gone as yet. When in the future we plan out wisely the utilization of land to avoid the huge wastes and countless human tragedies which result from unwise, unplanned utilization of land, we shall have taken enormous strides forward toward the permanent prosperity that is the goal set us by President Hoover.

This review could be continued indefinitely because such a vast field is covered in the two volumes on *Recent Economic Changes*. It will be brought to a close, however, with one or two observations.

One of the striking features of the work is the acceptance of the theory of high wages as essential to prosperity. This is found in the chapter by Professor Wesley C. Mitchell which seems to adopt without qualification certain trade-union theories of wages which have, in the past, been challenged. His treatment also calls to mind the theories of Rodbertus and others in regard to the causes of hard-times as found in inadequate consumers' purchasing power. It seems probable that he has been influenced by the writings of Foster and Catchings.

This work emphasizes what has long been apparent, namely, that economic researches must be carried on by groups. The field is so vast and the problems are so intricate that one man alone is unable to carry on the researches needed to en-

able him to make his fullest contribution to economic knowledge and sound economic policies.

I have already stated that if I should go over all the chapters in the present work and examine them one by one I would not find very much to criticize adversely. This statement, however, has reference to errors of commission rather than to two errors of omission. The writers whose chapters make up this book on *Recent Economic Changes* are among the leaders in economic thought in this country and they regard themselves and are regarded as progressive by others. What are we to say, however, about a treatise on *Recent Economic Changes* which has no systematic discussion of real estate with all the changes in its utilization during the present century and all its interesting and significant phenomena in price behavior and the planning of the utilization of the land as seen in zoning?

According to the *Statistical Abstract of United States* for 1928, giving the figures for 1922, we have the following estimates of wealth:

Real property, taxed,	155,909 millions of dollars
Real property, exempt,	20,506 millions of dollars
Total, real property,	176,415 millions of dollars

The total wealth of the United States is estimated to be 320,804 millions of dollars. The real property then amounts to 54.9% of the total. Is it possible that a description of *Recent Economic Changes* which omits a comprehensive survey of the facts and forces represented by real estate is adequate for scientific and practical guidance? Real estate is not even mentioned in the index and the only reference to land values is to two pages in the discussion of agricultural land. The changes in land values of agricultural

land are among the chief causes of present economic conditions but they may be of less significance than the changes in urban land values.

Subdivisions comprise now most of the new additions to the urban area. They receive no mention in these volumes. Little scientific work has been done in this field. No one knows the amount of wealth represented by subdivisions but it is safe to say that it amounts to hundreds of millions of dollars and that the losses involved in unwisely and prematurely planned subdivisions amount to hundreds of millions of dollars annually, whereas additions to the wealth of the United States by subdivisions are also vast. Probably the first really scientific work that has been done on subdivisions is that of the Institute for Research in Land Economics and Public Utilities which has planned a series of six monographs on this subject of which one has already appeared.⁶ There is no inclination to exaggerate the importance of this subject and of researches in this field but certainly we have to do here with something which has national significance. One does not have to search far to find impoverishment resulting from unwise investments because those who have been made poor in this way can be found on every hand. The behavior of prices here should be taken into account if one wants to contribute to the establishment of the permanent prosperity desired by President Hoover.

While no indication is made that serious attention has been given to the ownership of real estate and to the changes in this ownership and all the business connected with transactions in real estate, there can be no question that the changes in the real estate business have been as significant as the other changes that have been described, for example, the changes in construction. Enormous

⁶"The Use of Deed Restrictions in Subdivision Development," Helen C. Monchow, 1928.

changes have taken place and are still taking place in the public control over the entire real estate business. In the state of Wisconsin, for example, licenses required to enable a man to do real estate business in that state have in the very recent past been revoked because subdividers were using high-pressure selling methods and boosting unreasonably the price of the land that they were selling. The Governor of Wisconsin has called in a conference of men of integrity in the real estate business to make recommendations for a new license board, the old one having been discharged. Educational qualifications are coming to be required for the transaction of the real estate business. Treatises on land economics of a really scientific character are coming out. This is not the place to go into what has happened in the way of changes in the ownership and management of real estate and transactions in real estate. Attention is simply called to the fact that this field is neglected in these volumes.

Something is said about public utilities in this work under that head and also under the heading of "Power" but it is very little in the way of treatment of them from the economic point of view. Professor William J. Cunningham of Harvard University has written an excellent chapter on railways but otherwise public utilities receive little attention. The total capital invested in electric railways, light and power systems, gas companies and wire communications is approximately 17 billions of dollars as indicated by the 1919 Census data on

manufactures, while that of the steam railways is estimated approximately at 20 billions of dollars. The nearest approach to these totals in any other organized productive industry or group of allied industries is found in the iron and steel business in which the capital invested in foundries and rolling mills amounts to about \$3,500,000,000 or less than the amount invested in public utilities and railroads. The total capital invested in all manufacturing industries of the United States in 1919 was \$44,197,722,282.

In recent years tremendous changes have taken place in the vast economic field called public utilities. The extent and character of municipal ownership has undergone radical changes attributable largely to technological causes. Control is being developed over public utilities and we are gaining new knowledge about the financing of public utilities. In short, we are developing a public utility economics which is going along with recent economic changes in public utilities.

I hold that these sins of omission are very serious and lessen the value of the work as a description of what is taking place in the economic life of the United States. Furthermore, they reduce the usefulness of the book as a basis for forecasting the future economic changes, and there was never a time when forecasting was of greater significance as a means of bringing about the desired improvements that will lessen human misery and promote human prosperity.

THE SAN FRANCISCO CONDEMNATION CASES: AN ABSTRACT OF THE DECISION IN THE GREAT WESTERN POWER COMPANY PROCEEDING¹

By WALTER J. HERRMAN

ON February 11, 1924, the City and County of San Francisco, having before it the question of the disposal of power developed in connection with its projected Hetch Hetchy water system, initiated steps to acquire under eminent domain proceedings the two electric distribution systems operating in San Francisco. Under the California statutes, the initial step in such acquisition is a proceeding before the California Railroad Commission in which that body fixes the just compensation to be paid for the properties in question. This article is a review of the Commission's decision and its findings of just compensation for the properties and business of the Great Western Power Company, the principles laid down in this case being, to a substantial degree, also employed in the parallel case of the Pacific Gas & Electric Company, concurrently decided.

After a brief statement of the authority for the proceedings and a description of the properties involved, the Commission turned directly to a discussion of the two opposing theories of measuring just compensation advocated in the evidence. "The Company", said the Commission, "bases its claim of just compensation primarily upon the theory enunciated by its witness, Dr. A. T. Hadley. . . . that the value of a public utility business should be measured by the income which it produces; that where the whole property is taken just compensation will be the permanent recovery of the total loss

of prospective net earnings, and that where a portion of the property is taken just compensation is the permanent recovery of the prospective impairment of income of the whole investment."

The Commission then pointed out that in applying this theory the Company made use of two methods:

1. An estimate of the losses in net revenue arising from the contemplated severance for a number of years in the future, which, after correction for the required investment charges incident to future business, were reduced to a composite present worth through the use of 6% discount factors.
2. An estimate of the loss in net revenue, arising from the contemplated severance for the single year subsequent to the date of valuation, was capitalized at 6.26%, which rate had been shown to be the average yield of funds invested in electric public utility securities of the same investment characteristics and classified in the same proportion as like securities in the capital structure of the Great Western Power Company.

The Company's figures of total compensation for the loss of its San Francisco properties and business, derived by application of these methods, are summarized as follows:

Present worth of future annual losses of net revenue

¹ See *Journal* for February, 1929, for description of properties and review of evidence.

corrected for additional investment—Severance as of Jan. 1, 1924.....	\$33,051,000.
Same as above—Severance as of January 1, 1926.....	34,890,000.
Same as above—Severance as of January 1, 1928.....	37,171,000.
Capitalization of first year's loss of net revenue at 6.26%—Severance on February 11, 1924.....	30,900,000.
Same as above—Severance late in 1926.....	36,143,566.
Same as above—except assuming investment in Great Western Power Company securities—Severance on February 11, 1924.....	31,860,290.

"The City", stated the Commission, "takes the position that the value to be fixed should be obtained by finding a figure of reproduction cost new less depreciation, to which should be added going value and severance damages." The City's figures, derived according to this method, were as follows:

Reproduction cost new.....	\$ 7,552,474.
Deduct straight line depreciation.....	2,500,690.
Reproduction cost new—Less depreciation.....	\$ 5,051,784.
Universal properties ²	1,337,879.
	\$ 6,389,663.
Miscellaneous deductions....	379,591.
Total Physical property.....	\$ 6,010,072.
Add going value.....	530,000.
Add severance damage.....	2,766,465.
Total Just Compensation..	\$ 9,306,537.

Because of the wide divergence of the results of these two methods the Commission declared that one, or both, of the theories were seriously at fault.

The income method advocated by the Company, the Commission went on to say, has heretofore been rejected in other proceedings for the following reasons:

"As a measure of value it is considered too unstable. It is based upon constants

which are in fact variables. It assumes for the indefinite future that this Commission will not change the rate of return; that the net return, the losses and the risks incurred will remain the same; that there will be a definite future program of building with depreciation charges and prices remaining the same; that future cost of financing will follow the present; that there will be a certain future population; that no form or mode of heat, light or power will transplant, modify or compete differently with the present electric service; that certain estimated but unknown revenues and operating and maintenance expenses will accrue; and that many other indeterminable things will come to be realities."

The Commission specifically criticized the Company's first application of the Hadley principle because it involved consideration of future revenues, expenses and capital expenditures. Exception was taken to the Company's second method on the ground that the results were purely mathematical, lacking the exercise of judgment.

On the basis of these general objections and without further specific criticisms other than those just noted, the Commission stated that in this proceeding, as in previous ones, it would refuse to give any material weight to the conclusions developed under the Company's theories. It added, however, "that the facts and figures developed in this record regarding this property from the standpoint of income will be fully considered together with other factors that form a basis for determining value."

The Company's theories having been thus virtually rejected, the Commission indicated that its process of arriving at just compensation would proceed in a general way along the lines advocated

² The Universal Electric & Gas Company was originally an independent electric system which was later jointly acquired by the other two operating companies in San Francisco. In making up the appraisals this property was considered separately from the remainder and therefore appears here as an individual item.

by the City, the subject matter being treated under two main headings, "Property to be Taken" and "Severance Damages," the law requiring that these two items be separately ascertained.

Property To Be Taken

The detailed inventory of the property to be taken as of February 11, 1924, was made in the field by engineers of the Commission and checked by the engineers of the Company and City. This inventory and itemization of the structural properties and real estate as presented in the record was accepted by all parties.

In collaboration with the engineers of the City and the Company, the Commission engineers arrived at unit costs based upon a time average of material prices and wages prevailing during a hypothetical construction period of three and one-half years, ending on February 11, 1924, which were then applied to the inventory in the process of arriving at the reproduction cost new of the property. These unit costs, while not wholly agreed to by the Company during the course of the proceeding, seem to have been finally accepted by both it and the City in their respective briefs. In addition to this, other price studies were likewise made covering periods of one, two, three, four, and five years, all ending on the same date, together with a spot price as of February 11, 1924, to which figures applied to structural properties no disagreement seems to have been recorded.

In determining final reproduction cost several minor differences between the various parties were adjudicated by the Commission as follows:

Pricing Period. The City, in its brief, contended that the three-and-a-half-year basis originally employed produced too large a figure, and that a two-year period would more nearly represent a proper

price level. The Commission, however, adopted the three-and-a-half-year pricing period as the more reasonable basis.

Allowances on Land. The Company made certain claims regarding additional costs of surveys, commissions, insurance, etc., that were to be added to the bare land values found by the Commission engineers. These additional costs were not allowed.

Preliminary Organization. The Company also claimed that it should be compensated for certain preliminary expenses such as feasibility surveys and reports, preliminary engineering and legal advice, corporate organization and other sundry preliminary expenses. The amount of \$125,000 claimed by the Company for these costs was allowed by the Commission.

Executive Supervision. The Company also claimed that an additional allowance of 3½% of direct costs should be made for executive supervision, this being in the nature of a construction management fee. This claim was not allowed by the Commission.

Interest During Construction. Substantial differences in the estimates of interest during construction were brought out in the evidence, the Company claim for this charge being approximately 6.9% of direct costs as compared with the estimate of the Commission's engineers of 5%. In its decision the Commission simply stated that it had considered the testimony of both parties and believed that the estimates of its own staff were the more reasonable.

Miscellaneous Service Equipment. One of the outstanding arguments in connection with the physical property valuation was the consideration of certain equipment, known as "Miscellaneous Equipment", which consisted primarily of conduit and cable on the consumer's premises between the property line and

the meters. Because of the rather inaccessible location of most of this equipment it was inventoried through office records, with a partial spot field check by the Commission's engineers. During the course of the hearings, an agreement was reached by representatives of the Company, Commission and City, whereby a depreciated value of \$152,500 for this class of property was established. In its decision, however, the Commission pointed out that much of this equipment was installed by the Company as an inducement to get business, and since ordinarily such equipment is provided by the consumer, it would be erroneous to include any amount for this item in a reproduction cost new appraisal, but that it should be given consideration as one of the elements of "going concern value".

Office Equipment: Work in Progress. Additional allowances for office equipment and construction work in progress, not covered in the original appraisal, were made in the amounts of \$15,217 and \$64,368 respectively.

Universal Electric and Gas Properties. Prior to the initiation of these proceedings the system of the Universal Electric & Gas Company in San Francisco was taken over and operated by the Great Western Power Company through agreement with the Pacific Gas & Electric Company, which latter Company subsequently, on October 28, 1924, became the legal owner of one-half of the distribution properties, exclusive of substation properties. On December 9, 1927, the City and the two Companies entered into stipulation under which the interest of the Pacific Company in the Universal properties was to be excluded from the amount of the award under the instant application, and included in the award to the Pacific Company in its parallel proceeding. In order that proper distri-

bution of the proceeds of the award could be made between the Great Western Power Company and Pacific Gas & Electric Company, the Commission fixed an amount of \$728,800 as its finding of just compensation for the remaining undivided portion of the Universal property appraised and included as part of the Great Western Power Company's properties. It is interesting to note that this amount was the agreed reproduction cost of this property depreciated on the sinking fund basis, without any addition for severance damages, going concern value, or other intangible items.

Depreciation. Generally speaking, the claims of the City were based upon the use of the straight line method of depreciation, whereas those of the Power Company (in so far as physical value was considered in the Company's evidence) were based upon the sinking fund method. The witnesses for the Commission presented exhibits making use of both methods but in its decision the Commission adopted the sinking fund theory, and the conclusions of its engineers based on that method.

Price Substitution. Another controversial element arising in the determination of reproduction cost was the substitution by the Commission's engineers of modern equipment for the equipment inventoried, in lieu of applying current prices to the actual equipment in use. The Company argued that since reproduction cost was only a single element to be considered in the final findings of value, the methods to be followed in determining such reproduction cost should consistently reflect costs and not value *per se*. The Commission, apparently holding the opinion that reproduction cost was the primary element of value, acquiesced in the use of substitute equipment by its engineers.

Going Concern Value. The Company

introduced four methods of estimating the cost of reproducing the business attached to the San Francisco properties and claimed that this item was not less than \$4,000,000. These methods included: (1) an estimate of new business solicitation and expense, assuming a potential load existing in a district already served but having an unsupplied demand; (2) the cost of consolidating a number of small unprofitable systems based upon actual past experience of the Great Western Company; (3) the cost incurred in purchasing profitable systems; and (4) the historical cost of acquiring the San Francisco electric properties, exclusive of physical equipment, based on the actual experience of the Company. In discussing these methods the Commission declared that the first gave an unreasonably high answer and that the fallacy of the others lay in assuming that the reasonable reproduction cost of attaching the business considered in this proceeding should be measured by the cost of properties purchased by the Company to make its entry into San Francisco and to extend its operations, especially where such properties held more or less strategic and nuisance positions.

The City's estimate of going value, including the cost of developing the business, was \$530,000, this sum being based upon City Witness Durand's theory that going value is the worth attaching to an operating business over and above the cost of property and material in place. Dr. Durand's formula for determining going value was to take the rate-base for the properties in question, multiply by the standard rate of return allowed by the Commission and divide the product by the rate of interest that would be acceptable to a prospective purchaser.

This formula was not utilized by Dr. Durand directly, but the theory was adopted in a general way by a second

witness who considered in addition the past and possible future growth of the City, the Commission's rate-fixing attitude, possible risks of the business (including municipal condemnation and competition) etc., and then by an act of judgment arrived at a final figure of \$530,000. It was also pointed out that this amount was approximately equal to one-third of the sum arrived at by a strict application of the Durand formula outlined above.

In commenting upon the City evidence in this connection, the Commission discussed at some length the impropriety of allowing the possibility of condemnation to affect the value to be found for the property under condemnation. In a further discussion regarding going value generally, the Commission then pointed out the peculiarly stable character of utility enterprises, the obligation of the utility to serve the public and the consequent differences between the value of goodwill in a private business as contrasted with the case of a public utility. It is interesting to note, however, that no final amount was set up by the Commission for going concern value, the simple statement being made that going value did exist to a substantial amount and would, therefore, be considered in the final figure of just compensation. In a later paragraph it will be shown that the amount of the going value included was 10% of the physical property valuation.

Market Value. Testimony on market value of the Company's properties both with and without the San Francisco portion proposed to be expropriated was introduced through depositions of four investment bankers. These witnesses based their conclusions upon an analysis of a comprehensive statement of facts and figures regarding the properties and business of the Company, among which

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were included rate schedules, property costs, growth statistics and detailed earnings statements for recent years. The Commission pointed out, however, that in the absence of personal contact with the properties on the part of these witnesses, their conclusions as to market value based on purely statistical data could not be accepted as final. The criticism was also made that the witnesses did not sufficiently describe the basis upon which their conclusions rested, and that where such basis was disclosed, it appeared that capitalization of income had been used. This method having already been rejected, the Commission stated that it could give but very little weight to the sum of approximately \$28,000,000 loss in value testified to by these witnesses.

Without further discussion, but qualifying their opinion by the broad statement that all of the evidence submitted had been considered, the Commission recommended that just compensation for the properties to be taken, including going value, but excluding severance damages, should be fixed in the amount of \$8,440,000. That this figure was nearly \$2,000,000 more than the City's estimate can be accounted for chiefly by the use of unit prices averaged over a longer period, the inclusion of certain organization expenses, and the going value allowance. An analysis of this award showing the probable items included is subsequently set forth.

Severance Damages

The engineers of the Commission submitted no evidence as to the nature or amount of damages caused by the severance of the properties in question from the system as it now exists. The California Farm Bureau Federation presented testimony setting forth the uneconomic nature of the proposed sever-

ance and the disastrous effects that such action might have upon the rural communities of the State, together with exhibits setting forth what was stated to be a severance damage award sufficient to protect the remaining consumers of the Company from increased rates. This evidence was rejected by the Commission, however, because it was founded on a basis involving calculations of future income similar to that advanced by the Company.

Both the City and the Company presented detailed estimates of severance damages allocated to specific items of property and to certain functions of operation. Of the various items submitted in the evidence, the following were treated in the Commission's decision:

1. Severance damages resulting from the complete or partial non-use of submarine cables under San Francisco Bay not included in the City's petition but rendered practically valueless to the Company without the City load:
 Company claims.....\$857,777.
 City claims..... 698,086.
2. Severance damages to equipment, building space and land in San Francisco, which, although excluded from the City's petition, would be rendered either wholly or partially useless through severance.
 Company claim.....\$770,596.
 City claim..... 271,275.
3. Severance damages allocated to the hydro-electric and transmission system of the Company resulting from the destruction of the diversity existing between the San Francisco load and that of the remainder.
 Company claim.....\$7,629,000.
 City claim..... None
4. Severance damages allocated to the hydro-electric and transmission system of the Company resulting from the burden of support of excess capacity.
 Company claim.....\$9,591,000.
 City claim..... 1,797,104.
5. Severance damages resulting from the excess cost of conducting the general administrative business of the severed

system as compared with the cost of conducting that same business as a part of the whole system.

Company claim.....\$ 778,000.
City claim.....None

In reviewing these various claims, the Commission stated that in most instances the Company's figures relative to specific units of the system (bay cables, miscellaneous equipment, etc.) were more indicative of the extent of damage than those of the City. The Company's calculations of damage to hydro-production and transmission property, however, were generally rejected because of the asserted speculative nature of the methods employed.

Without discussing the evidence further, but again qualifying their opinion by the statement that all of the evidence had been thoroughly studied, the Commission recommended that the just compensation for severance damages arising from the taking of the San Francisco properties should be fixed at \$3,375,000. Taken in conjunction with the Commission's separate finding of \$8,440,000 for the properties to be taken, the aggregate award for both properties and damages amounts to \$11,815,000.

Discussion

Analysis of Award. At this point it may be interesting to attempt to reconstruct the probable itemization of the Commission's findings as outlined above.

Although it is, of course, impossible to state arbitrarily that any specific procedure was employed, apparently the Commission's award of \$8,440,000 for properties to be taken was derived approximately as follows:

Reproduction cost of physical properties, less sinking fund depreciation, Commission engineer's exhibit.....\$7,639,662.

Deduct miscellaneous service equipment.....152,500.

*\$7,487,162.
Add 10% going value.....748,700.
Add preliminary organization..125,000.
Add general office adjustment..15,217.
Add work in progress.....64,368.

Total.....\$8,440,447.
Actual Award for Property to be Taken.....\$8,440,000.

In analyzing the award for severance damages, the breakdown of the Commission's finding is less readily apparent, but it is obvious that, with minor adjustments, the following combination of items entered into the figure derived:

Bay cables, Company claim...\$ 857,777.
Equipment, buildings, etc., Company claim.....770,596.
Excess hydro and transmission capacity, City claim.....1,797,104.

Total.....\$3,425,477.
Actual Award for Severance Damages.....\$3,375,000.

Briefly then, it appears that the outstanding data upon which the Commission based its finding for property to be taken were derived from the reproduction cost new appraisal corrected for sinking fund depreciation as established by its own engineering staff. Going concern value to the extent of 10% seems to have been more or less arbitrarily added to depreciated cost, together with minor adjustments for organization expense, service equipment, etc. Severance damages were apparently determined as the sum of the Company's claims for loss relative to distribution equipment plus the City's allowance for damage to the production and transmission system.

Other Evidence. If the above analysis is at all indicative of the specific items entering into the Commission's findings, it is rather obvious that little or no weight was given to the numerous other

phases of the voluminous evidence submitted, considerable portions of which were not even mentioned in the decision itself. The following items include some of the more important points to which no reference appears in the decision:

- (1) Expropriation at January 1st of any of the years 1920 to 1925, inclusive, would have caused loss in net earnings for the year following expropriation, varying from about \$700,000 in 1920 to about \$2,000,000 in 1925.
- (2) Expropriation at January 1, 1924, 1926, or 1928 would cause a loss in adjusted net for return for each of the following years studied; the average annual loss being in excess of \$2,000,000.
- (3) Relatively large errors in the estimates of loss in future years would not greatly affect the total present value of the aggregate loss as calculated.
- (4) The capitalized present earnings of the San Francisco properties, considered as a separate unit, vary from about \$12,300,000 to \$18,600,000, depending on the cost of the power supply.
- (5) The value of the San Francisco properties, when joined to a large system, is at least 10% greater than when operating as a single unit.
- (6) The average revenue per KWH in San Francisco is 2.45¢ as against 1.39¢ in remaining territory.
- (7) The present worth of the successive annual amounts, by which the estimated net for return on the income base of the system excluding San Francisco fails to equal the net for return on the same base at the rate of return that would prevail in the same year had expropriation not occurred, amounts to \$15,978,000.
- (8) The Company would not be able to increase its present income on its remaining property because of competition with other electric systems.
- (9) The loss of the San Francisco City load would so delay the utilization of water storage and generating facilities that the present water right values would be reduced by several million dollars.
- (10) The loss of the San Francisco territory would impair the credit of the Company to such an extent that its average cost of obtaining capital funds would

be increased at least one half of one per cent.

- (11) Expropriation with payment of just compensation in the amount of \$10,000,000 as suggested by the City would reduce the Company to a state of virtual ruin. This testimony and the exhibits accompanying it were based upon a detailed analysis of the financial condition of the severed system during the 12-year period after the date of expropriation and showed that in no time during this period would there be sufficient income to pay common stock dividends and that in nine of the years studied the current income would be insufficient to pay preferred dividends. Supplementing this showing, a prominent San Francisco investment banker testified that under such conditions the outstanding securities of the Company would suffer a shrinkage in market value of over \$18,000,000.
- (12) The Company also presented evidence relating to the use of the San Francisco properties for the service of outside communities, the claim being made that taking of these properties (including the Company's primary stand-by steam plant) would substantially reduce the reserve capacity of the remainder of the system, and also that certain territory adjacent to San Francisco on the south, and dependent on energy supplied over the lines within the City itself, would be entirely isolated from the Company's primary sources of power in the north.

Present Status. At the present time both Companies⁴ have already petitioned the California Railroad Commission for rehearings, these petitions dealing not only with the specific findings of the decisions, but also with many legal questions as to jurisdiction of the Commission, constitutionality of the statutes, etc. Should the rehearings sought by

⁴In the parallel case of the Pacific Gas & Electric Company, the claims for total compensation of the Company and City were \$67,000,000 and \$18,894,000, respectively. The Commission award was fixed at a total of \$26,880,000, of which \$23,830,000 was for the properties sought to be taken and \$3,050,000 was for severance damages to remaining properties.

the Companies be denied, it is assumed that they will carry the matters to the California Supreme Court, and if satisfaction is not found there, to the federal courts.

The City has meanwhile taken preliminary steps to have its electorate authorize bonds for acquiring the properties, for which a two-thirds vote is required. It is obvious, however, that even if the voters of San Francisco should elect to purchase and acquire the properties, the instant decisions of the Commission mark only the starting point of further extended proceedings. In this connection it should also be noted that another complexity in the situation arises from the fact that more than five years have elapsed since the proceedings were initiated, and that the just compen-

sation as found related to the properties as they existed on February 11, 1924. Consequently the passage of time, during which extensive additions to the properties have already been made, renders the present findings obsolete at this date.

Although these proceedings involved many unique and unusual phases of public utility economics, the decisions handed down by the California Railroad Commission unfortunately fail to answer many vital questions raised and serve only to reiterate some earlier principles and methods. Should the cases be carried to the federal courts, however, it is possible that they may yet become outstanding in the history of public utility valuation for condemnation purposes.

TRADE UNION ACTIVITIES IN THE ELECTRIC POWER INDUSTRY¹

By CHARLES F. MARSH

THERE are two broad classes of wage-earners in the electric power industry: those engaged in operation and maintenance, and those engaged in construction. Operating employees can be subdivided into production or power-house workers, chief among which are stationary engineers, firemen and oilers, and into distribution workers, such as linemen, cable-splicers, metermen, troublemen, and sub-station operators. Construction workers in the industry can similarly be classified according to production and distribution. The construction of power-houses is carried on by building trades workers. Transmission and distribution systems are constructed, for the most part, by linemen and cable-splicers.

Technical developments within the industry, such as interconnection and hydro-electric developments, have tended to lessen the relative importance of power-house workers. Linemen and other distribution workers,² on the other hand, have become relatively more important as existing transmission and distribution systems have been reconstructed and extended and new systems have been built. The lineman has occupied a position of unique importance in that he is both a construction and an operating worker. For small extensions

or changes of the distribution system he has generally been employed directly by the operating electric light and power company, whether engaged in construction or in operation and maintenance work. The growth of the industry has necessitated the construction of many new power-houses, sub-stations and other buildings. Building trades workers, particularly electric wiremen, have been in great demand. They have never been an important part of the operating personnel, however, and are usually employed by construction companies, which may or may not be affiliated with operating central station companies, rather than by the operating companies themselves. Hence, it is evident that linemen, who are engaged both in the construction and in the operation and maintenance of distributing systems, a type of work which has steadily become more important as the industry has developed, are the most important type of worker in the electric power industry.

Consequently the International Brotherhood of Electrical Workers, to which the American Federation of Labor has granted jurisdiction over linemen, as well as cable-splicers, metermen, troublemen, sub-station operators, wiremen, and other electrical workers, is the

¹ This article is a summary of the writer's study entitled "Trade Unionism in the Electric Light and Power Industry," which is to be published in the near future as a volume of the Studies in the Social Sciences of the University of Illinois. The chief sources of this study were the official publications of the International Brotherhood of Electrical Workers, particularly the letters of members of local unions which appeared in the official Journal, the International Union of Steam and Operating Engineers, and the International

Brotherhood of Firemen and Oilers, the files of the *Electrical World*, and the *Proceedings* of the Conventions of the National Electric Light Association. These sources were verified and supplemented by general reading and by interviews and correspondence with employers and union officials.

² Because of the increased use of automatic sub-stations, this statement does not apply to sub-station operators to the degree that it applies to other distribution workers.

most representative trade union in the industry. In the early days of the industry, when isolated generating plants were the rule, the International Union of Steam and Operating Engineers and the International Brotherhood of Firemen and Oilers were probably fully as important as the I. B. E. W.³ The decline in the relative importance of all power-house production workers, however, because of technical developments within the industry, has been accompanied by a decline in the importance of the Engineers' and Firemen's Unions, which have jurisdiction over such workers.

For these reasons the activities of the Brotherhood and its local unions in attempting to better working conditions in the industry, together with the effect of such activities upon the industry itself, the workers, and the public, form the basis of this study.

The history of the influence of the Brotherhood upon wages and working conditions can be summarized briefly.⁴ Prior to 1903, the weak, decentralized organization of the Brotherhood prevented it from exercising any great influence. Between 1903 and 1908, the influence of the Union increased markedly as a result of the development of the industry and the internal centralization of control over Union activities. However, secession of a large number of members between 1908 and 1913 seriously weakened its position in the central station as well as other industries. The industrial depression of 1913-1915 and increased anti-union activities, both of a direct and indirect nature, retarded the Brotherhood's recovery from the

secession until the spring of 1916. The war influences of 1916-1920 caused the Brotherhood's strength to increase to a phenomenal degree. Between 1920 and 1924 most of the gains of the previous period were wiped away, because of the depression of 1920-1923 and the growth of the company union movement. Since 1924 the influence of the Union upon wages and working conditions has declined steadily because of increased consolidation within the industry and the wide-spread extension of company unions which consolidation has facilitated.

Sensing this, the officers of the Brotherhood turned to the method of propaganda, which had been used by local unions with some degree of success for many years, in an attempt to bolster up the economic strength of the Union. Their activities along this line took the form of vigorous agitation for public ownership of electric light and power utilities, particularly of hydro-electric developments.⁵ The general attitude of the American Federation of Labor, as expressed in its official publications during 1924-1926, the years of most vigorous public ownership agitation by the Brotherhood, seemed to be more emphatically in favor of public ownership of power enterprises than it had ever been before. This was undoubtedly caused, to a considerable degree, by the attitude and activities of the Electrical Union, one of the four strongest organizations affiliated with the A. F. of L.⁶ and the Union which has been in the best position to represent the interests

⁵ More attention will be given to the influence of the Union and its local branches upon the public relations of power companies in a later issue of the *Journal*.

⁶ The importance of this Union is the result chiefly of its strength in the building trades rather than its strength in the power industry. Of the approximately 140,000 members of the Brotherhood, the writer has reason to believe that not over 20,000 are connected directly with the power industry.

³ Hereafter, the International Brotherhood of Electrical Workers will be referred to as the Brotherhood, the Electrical Union, or simply the Union.

⁴ The collective bargaining activities of the Brotherhood will be treated at greater length in an article which is to appear in this *Journal* in the near future.

of organized labor in the electric industry.

In 1927, however, organized labor and the Brotherhood apparently abandoned for a time at least, their public ownership program. President Green of the American Federation of Labor, in a speech before the 1927 Convention of the National Electric Light Association, implied that organized labor would not favor public ownership of the electrical industry if it could be given its just rights under private ownership. The published statements of Brotherhood officials which constituted the chief medium for the Union's public ownership agitation during 1924, 1925, and 1926, contained scarcely any mention of the subject. This abandonment of the method of propaganda, however, would seem to testify to the success rather than the failure of that method. Certainly from the tactical point of view, public ownership agitation touched a sensitive point in the minds of the electric industry's leaders. At any rate the action of the National Electric Light Association in extending an invitation to President Green constituted the first act of the industry as a whole which might be construed as a recognition of organized labor. It is difficult to interpret this action except as a bid by the leaders in the industry for the support of organized labor and an indication

that they are willing to grant labor a greater degree of recognition in the future than they have in the past. President Noonan, of the Brotherhood, apparently construed the N. E. L. A. action in this manner. Shortly after the N. E. L. A. convention he asked and received authority from the convention of the Brotherhood to negotiate with leaders in the central station industry for a declaration of principles providing for the recognition of the Union, increased emphasis upon cooperation and efficiency, and the virtual outlawry of strikes.⁷

Though predictions are always dangerous, it is probable that some form of national understanding will be reached between central station employers and the Brotherhood, which will open the way for agreements between local employers and unions.⁸ It is unlikely, however, that such an understanding will apply to all of the workers who are now considered as being within the jurisdiction of the Brotherhood.

In the first place, the organization is a trade union which is composed very largely of linemen and inside wiremen. The attempt to include several other distinct trades, such as meter testers and sub-station operators, in the same category with linemen, the largest class of workers in the central station industry, has never been very successful. Apparently the only way in which these vari-

⁷ Such a declaration was adopted by the Brotherhood and the National Association of Electrical Contractors in 1919 and led to the establishment of the Council on Industrial Relations for the Electrical Construction Industry, a bipartite board which has met with considerable success in lessening industrial warfare in that industry.

⁸ In a letter addressed to the writer on February 15, 1928, President Noonan said, in part: "Frankly, we have made some progress towards this end. A number of men in the power industry expressed themselves as having acquired the opinion that labor unions were not anarchistic combinations . . . but were business institutions . . . I do not know whether or not this will be in the shape of a declaration of principles similar

to that obtaining between the Brotherhood and the National Association of Electrical Contractors, but . . . it is probable that some such understanding might be reached that will form a general basis for understandings between companies and their employees locally."

On June 5, 1929, Mr. Noonan wrote to the author as follows: "There have been no further negotiations between the I. B. E. W. and those representing the power industry . . . Before continuing any negotiations along that line, we are desirous of getting all of the information that might come out of the investigation now being conducted by the Federal Trade Commission into the power industry."

ous trades could be successfully handled by the Brotherhood would be to reorganize it on the basis of an industrial union. Such a reorganization would result in a separation from the wiremen, most of whom are building tradesmen, and would thus deprive central station workers of benefits received through direct affiliation with the building trades, which are completely unionized in many localities. Moreover, members of the Brotherhood have always been traditionally opposed to industrial unionism.

In the second place, the importance of developing a "family spirit" on the part of operating employees, particularly those who have direct contact with the consuming public, makes employers unwilling to permit outside interference in matters concerning these workers. Hence, it is reasonable to believe that employers would be opposed to their unionization.

The tendency is undoubtedly in the direction of clearer differentiation between the operating "family" of the central station employer and that type of labor which is not so closely related to the rendering of service to consumers. That is, the "family" is steadily being narrowed to include only managerial, clerical and semi-clerical, and exclusively operating employees, such as metermen, troublemen and sub-station operators, as well as those production employees who are nominally under the jurisdiction of the Engineers' and Firemen's Unions. It seems logical to believe that these types of employees will become even more predominantly non-union in the future than they are at present. The large body of workers engaged in the construction, reconstruction and maintenance of transmission and distribution systems, made up mostly of linemen and cable-splicers, are finding themselves more and more outside the "family

circle" and are being employed by independent contractors or by construction companies controlled by the power companies. They are steadily assuming the nature of building-tradesmen, working on a temporary, job basis rather than a permanent, annual basis. This is the type of workers which will become unionized to a greater extent than in the past, if the above-mentioned national understanding is consummated.

This understanding would be advantageous to the Union in that it would facilitate organizing that type of central station employee upon which the Union has always centered most of its organizing efforts. It would be advantageous to the industry, most of all, because it would transform a large group of people possessing a considerable degree of solidarity—organized labor, in general—from a group of advocates of public ownership and opponents of the utility companies into allies or, at least, into people who would not be actively antagonistic to the industry. Moreover, in so far as such an understanding would result in the greater unionization of linemen, the companies might be able to cut down much of the expense of insurance plans, pensions, etc., as the Brotherhood has already developed beneficial features of this type and will undoubtedly develop them still further as its membership grows.⁹

Although this summarized history of the relations between the Brotherhood and the electric light and power industry has indicated the general effect of union activities, special mention should be made of wages and working conditions. The connection between union strength and the wages and working conditions of individual workers is

⁹ A future issue of the *Journal* will contain a more detailed discussion of the welfare activities of the Brotherhood.

close but by no means directly correlated.

It is generally true that wages and hours, and working conditions closely related to those two subjects, have tended to improve as the power of the union in the industry grew. This statement is made with full realization of the fact that the influence of the union has tended to vary directly with good business conditions. It is probably true that wages would have increased during and after the 1916-1920 period of prosperity had there been no labor unions. The fact, however, that many wage increases in the electric light and power as well as other industries during that period were secured only after strikes and threatened strikes by unions shows that the extent to which wages lagged behind the cost of living would have been much greater had it not been for organized labor. Another exception to the general rule that wages and working conditions tend to vary directly with the strength of the union in the industry is found in the fact that wages are as high in the central station industry, and in many cases even higher, during this present period of Union weakness as they were in 1920, when the power of the Union was at its height. This situation is not peculiar to the electric light and power industry, however, as wages have increased generally since 1920, except during the 1920-1922 depression. In spite of this general increase in wages, there is reason to believe that wages in the central station industry are higher in those companies where Union influence is strong than elsewhere. This is particularly true in those cities where municipal plants are also in existence, such as Detroit and Seattle.¹⁰

The safety activities of the union, though directed almost as much toward establishing safety standards of construction which would necessitate the employment of a larger number of linemen, have tended to lessen the hazards of the occupation. The Union will undoubtedly continue to serve the best interests of the individual workmen through representing them in commission hearings concerning safe practices in the industry. The benefit features which have been developed by the Brotherhood primarily as a means of retaining the loyalty of its members have at the same time been of real service to the members. Particularly is this true of the life insurance features which have been established in recent years.

Certain other problems affecting the welfare of the individual workers, however, have been practically untouched by the Brotherhood. Foremost among them has been the problem of security of employment, which is equally, if not more important than the problems of wages, hours, safety and benefits. Indeed, many employers and some workers feel that the general effect of union activities is to increase insecurity of employment, in so far as those activities tend to result in strikes and lockouts. The proposed national understanding, with its opposition to strikes and recognition of the Union, would tend to do away with much of the insecurity which has accompanied the more or less constant friction between employers and unionists. On the other hand, in so far as it hastens the tendency toward linemen being employed on a temporary job basis, employment will tend to be

¹⁰On May 15, 1927, Union power linemen in these two cities were receiving \$1.20 and \$1.12½ per hour respectively (*Bulletin No. 457*, United States Bureau

of Labor Statistics, March, 1928, pp. 165-6). The writer is convinced that the strength of the Brotherhood in municipal plants of these cities has been responsible in no small measure for the maintenance of its strength in privately owned power companies.

less secure under such an arrangement than it has been previously.

The problem, however, is not insoluble. In the first place, public utility officials have already made some progress toward budgeting their work in such a manner that abnormal expansions and reductions in the size of the working force can be partially eliminated. Secondly, it is possible that some form of unemployment insurance will be developed, most likely under Union auspices. Finally, it is reasonable to believe that the recognition of the Brotherhood by the industry will result in increased wages and thus enable the workers to provide for periods of idleness through receiving a higher wage during periods of employment. This is generally recognized as the social justification for the high wages now paid to the building trades workers.

The public utility nature of the electric light and power industry, however, necessitates caution in making an analogy between the labor problems of that industry and those of the construction industry. The question immediately arises as to whether or not an alignment between the Brotherhood and central station employers which tends to increase wages is socially desirable. It seems reasonable to believe that the high wages in the building trades have been passed on to the public in the form of higher construction costs. Higher wages in the central station industry will undoubtedly be reflected in electric rates, whether, as construction costs, they have been capitalized as a part of the investment, or whether they have been allowed as operating costs. Under these circumstances, the distribution of the income of the electric light and power industry among wage-earners, other employees, owners of capital, and consumers is certain to become a more

disputed question than it has been in the past. Disputes between wage-earners and management, however, will probably be less troublesome, as any national understanding which is reached between the two parties will, of necessity, provide some type of voluntary arbitration machinery. It is impossible to generalize concerning the extent to which public opinion will demand that governmental bodies attempt to fix wages in the industry. That public utility commissions will be compelled to give greater attention to the question of wages, not only of operating employees but also of construction workers, in attempting to fix rates of service which will guarantee a fair return to investors is a logical conclusion. The close relation between wages and rates of service makes it imperative that the public, as well as labor and management, have something to say about wages and the public utility commissions constitute the local representatives of the public in this matter.

The public is interested in the question of continuity of electric service perhaps even more than in the question of rates. Although there have been interruptions of service, because of disputes between unionists and employers which have seriously discommoded consumers, they have been insignificant as compared to interruptions of service in other utility industries, notably the transportation industry. Certainly, the problem will be even less important in the future. The large body of union workers in the electric industry are engaged very largely in construction work. Those employees who are directly engaged in operation are now largely non-union and the number of union members in this class will probably decline still further. Hence, even if the union electrical workers should suspend work, service would not

be interrupted except in case of an unusually long or sympathetic strike or catastrophe which would put lines out of commission. Moreover, the recent history of the activities of the Brotherhood shows an increasing tendency toward the settlement of disputes through peaceful means rather than through strikes. The negotiations which the officers of the Brotherhood have been, or contemplate, carrying on with leaders of the industry for a national understanding which will create conditions

that will make strikes unnecessary are an indication of a tendency in this direction.

The social importance of the problem of trade unionism in the electric light and power industry, consequently, does not lie in the relation between unionism and the continuity of service. It lies, rather, in the relation of unionism to the problem of fixing rates of service which will not be oppressive to the consumer, the worker, or the owner of capital.

LAND ECONOMICS AND RECLAMATION IN PERU

By C. W. SUTTON

I. Contrast Between Conditions Affecting Irrigation Policies in the United States and Peru

DURING the past year the condition of irrigation in the United States has led to several interpretations of the situation there with relation to the reclamation policy of the Federal Government. The question is raised as to what the underlying motives of that policy are or should be.

In this connection, figures are presented to show¹ that on some projects which have been opened to settlement for several years 50% of the crop lands are still idle and that, in general, nearly 20% more crop land is idle in the irrigated districts than in the country at large, where only 9% of such land is unused. From a point of view which takes no account of the indirect social, economic, political or fiscal benefits, the books of account, as at present designed, are presumed to show a fiscal loss of \$27,000,000. In short, it appears that reclamation as an effort simply to increase the nation's food supply or return interest and amortization by direct assessment upon irrigated lands has reached a point where it no longer agrees with its primitive motives.

Through the window thus opened to us irrigation appears to be no longer a national problem in the United States from the traditional point of view. If nearly 400,000,000 acres of crop land are not needing irrigation and can be bought for less money than is needed

to change a desert into a going agricultural concern, the question naturally arises, "What natural economic demand can there be for irrigated land?" If only 5% of the entire farming area of the United States is irrigated after more than 25 years of reclamation and the expenditure of \$150,000,000 to create a situation that overshoots the demand for farmers or the demand of farmers for irrigated land, then why should the Federal Government build any irrigation works until other factors in the problem of national life have been properly included in the equation?

At the same time, another question occurs to the Peruvian observer. If in the United States only a small percentage of land could be developed for agriculture without irrigation, if this land once acquired by a settler in the form of a small holding of from 10 to 20 acres could not be purchased from him at any price, if the rent of such land so classified as to area were so great as to give it a capital value of at least \$500 per acre, would the situation now existing there have arisen? If most of the fruits, grains and vegetables eaten by the population except those imported were produced on irrigated fields, a great part of the meats fattened and all of the cotton and sugar grown on such lands, if the principal cultural traditions and equipment of the masses of the population had been invented, derived and maintained from and about irrigation works and institutions since pre-historic times, would the people have adapted themselves so slowly to this type of agriculture on new areas? If there had been

¹ See *Proceedings*, American Society of Civil Engineers for May, 1929, papers by Mr. J. B. Lippincott and Dr. Elwood Mead.

no place in the United States for new communities to establish themselves, to expand or to contribute in any way, qualitatively or quantitatively, materially or ideologically to the development of the commonwealth except upon irrigated lands, then would it be regarded as disheartening, if, with a deficit of \$27,000,000 in the traditional type of fiscal estimates, the Government should have created communities which added at least annually more than \$77,000,000 to the income of the people of the United States, furnished a market for the consumption of similar values in goods and services, equalized economic opportunities for the farming classes in different regions and incidentally added more than \$10,000,000 per year to the national treasury,² apart from direct assessments to recover capital charges on the cost of the hydraulic works?

These questions, especially the latter series, might with equal force occur to the dwellers in the arid states of the North American Union who originally advocated reclamation there.

The history and motives of irrigation policies in the United States and in Peru are set in such strikingly different environments as to make it appear as if the motives of these policies, fundamentally social in both countries, were also of a different nature. The general geographical scope, the demographic importance, the economic need, the social meaning, the political effects and relationships, and the fiscal consequences of irrigation in Peru are very different in degree from these qualities of the problem north of Mexico. In view of these differences it may not be easy to make clear the contrast and its significance for a proper understanding of the Peruvian problem.

The most striking thing about Peru is that probably 80% of its people live

upon irrigated land or are occupied in activities which complete the value of irrigated crops. There is no idle crop land in Peru in lots of a size that permit sale or rental in the form of farms as distinguished from large plantations. Nor is there any marginal land in Peru except on the borders of the tropical jungle east of the Andes and along the gravel bars of the coastal rivers where the rural population, for lack of a more suitable place, plant corn between the stones in the seasons of low river stage. Land capable of being cropped on the large plantations is not marginal for the effect of free settlement because, although the plantation owner allows it to be occupied without rent in order to get it leveled cheaply for his use, he causes its reversion to him shortly or exacts a rent equal to from $\frac{1}{3}$ to $\frac{1}{2}$ of the crop. Such land does not operate upon land values in the sense that free marginal land would operate. The gravel bars of the coast are the only types that represent a margin not producing rent, and here only an extreme necessity can induce the marginal elements of population to work at times.

The problem in Peru is not how to get idle crop land into production but how to increase the area of crop land and how to keep settlers off the lands being prepared for crops until lots are properly subdivided and staked out and irrigation works in shape to give proper service.

Under these circumstances, in a country where since hundreds, and perhaps thousands, of years before the discovery of America, the greater part of the population has lived upon irrigated land, the problems of land and public utility economics occupy, at least in theory, a foremost place in state policies.

² This sum is based on the assumption that an increase in the consuming power of the population adds to fiscal revenues more than 10% of such increase.

II. Contrast Between Ancient and Modern Peru

At the time of the conquest of Peru in the 16th century the population of the country numbered at least 10 million. Some authorities state 20 million, while the population of to-day is probably not much in excess of five million. Ruins of towns and irrigation works bear testimony to a much wider and more intensive occupation of the land than at present. Wherever one travels along the coastal plains or up the Andean valleys one finds the ruins of canals and irrigated fields, their outlines stamped upon the desert in earthen walls and dikes, and running along hill contours in mud platforms that enabled the people of former times to escape the need of dynamite and steel.

What does this contrast between then and now mean to the student of land economics? Several routes might be followed in answering this question. We shall attempt to find the answer by studying the persistent types of ideas and conduct from epoch to epoch as reflecting conscious intellectual reactions toward the fundamental problems of economy and indicating generally either the effect of institutional influences and interests upon education and public policy, or the effort of public policy and education to influence institutional motives and structure. From this point of view we may say that the cause of retrogression of agriculture and population in Peru since the 16th century has been caused, or accompanied to an influential degree, by the following doctrines and policies:

A colonial policy based upon Mercantilism;

A policy of the republican era based upon the same doctrine, exaggerating the importance of exports and neglecting the consum-

ing powers of the home population;

An attempt to add scientific perfection to the Mercantilist or export economy by applying standardized mass production and cheap labor to an industry characterized by the law of diminishing returns and requiring the most interested intelligence on the part of the individual worker.

As a result of these doctrines persisting from epoch to epoch down to the present, the consuming power of the Peruvian population has been sacrificed to producing on a large scale with cheap labor one or two crops which are easily sold and financed abroad.

III. Stages in Peruvian Land Economy

In order to illustrate these statements we may divide the history of Peruvian land economy into five stages, remembering that agriculture and irrigation are practically synonymous in Peru. These stages may be named for the time being, the pre-colonial, the colonial, the pre-scientific, the scientific, and the agrarian.

The Pre-Colonial Period. The pre-colonial stage corresponds with the time of the Inca and pre-Inca regimes. At that time Peru, as a geographical unit, was not an exporting country. Its chief products were, as now, agricultural, and were represented by corn and yuccas in the low lands, corn and potatoes in the high lands. Animal husbandry was limited by the relative scarcity of animal life, although the coastal Indians had in some cases domesticated some fowls and small native pigs and the Indians in the high lands had extensive herds of llamas, alpacas and vicunas. The organization of agriculture was, as everyone knows, communistic and the masses who tilled the fields received $\frac{1}{3}$ of the product.

The Colonial Period. Upon the arrival of Europeans and the taking over by

them of the direction of all governmental and private activities, an abrupt change of economy occurred. The corn, yucca and potatoes, which were the basis of the Inca culture, appeared to be no longer of any value to a governing class whose primary policy was the exportation to another home-land of products of high value.

The most diligently sought products were the precious metals. The population of the great irrigated districts was impressed to extract mineral wealth. In this impressment the system of "encomiendas" and "reparticiones" played the part of a legal institution.

Toward the close of the 18th century agriculture had begun to supplement mining and also establish a new item in the mercantilist balance. Wheat was grown on the coast and exported. Cotton, an indigenous crop, was cultivated to some extent and sugar became established with imported African slaves whose labor cost owners about 30 centavos per day (12 cents United States currency at present exchange). The production of sugar at the end of the 18th century, however, was less than 6,000 tons per year, of which less than 2,000 were exported. To-day the sugar production is 374,000 tons per year and 300,000 exported with the same water supplies and upon practically the same irrigated areas as then available.

Probably the colonial period did not contribute much of importance to agricultural economy, for obviously it did not demand any extension or improvement in irrigation work.³

During the colonial period, however, conflicts began to occur over water

rights as between the plantation owners, grantees of the Spanish Crown, and the communities of small farms which, thanks to the protective policies of the Council of the Indies and to the zeal of such great churchmen as Dean Saavedra, maintained themselves among the ruins of the irrigation systems. The second or colonial period of economy came to a close with the period of independence.

The Pre-Scientific Period. During the first years of independence, in what we have called the pre-scientific period, political disturbances led to a great decline in the use of land. Taxes were at first greatly reduced with the idea that Peru was a great treasure field needing only generous concessions to foreign capital for its rapid and abundant development. Large estates were abandoned or left to haphazard administration. Military dictatorship revolved about the possession of public revenue derived from import taxes and later from the exploitation of guano and nitrate monopolies and from foreign loans. During this period, however, which lasted well into the latter part of the last century, the perfection of cotton ginning and finally the improvement of sugar machinery stimulated the expansion of the plantation system again.

Rice cultivation, introduced by Spain probably at the same time as in Carolina, was increased as a means of furnishing cheap food to peon and Negro and Chinese slave labor. The Mercantilist theory of production predominated throughout the period. Sugar, cotton and mineral products produced for export continued to be the central idea of national economy. The Mercantilist economic and political system, interrupted by a monetary struggle for a change of managers at the end of the colonial period, became thus frankly reestablished by the end of the pre-

³ We must, however, give due importance to the great variety of economic plants of all kinds introduced by the Spaniards everywhere and especially to the introduction of livestock which had been so lacking in the economy of the pre-colonial period.

scientific period. The succeeding period strengthened and extended it.

The Period of the "Científicos." The beginning of the fourth or scientific epoch at the close of the 19th century was accompanied by two movements abroad which characterized the development of economic ideas applied to statecraft there and had an influence upon the economic ideas of the period in Peru. I refer to the International Association of Cotton Growers and Spinners, and to the International Sugar Agreements. The first of these had been destined to convert the colonies of European countries and other regions of weak or incipient economy into suppliers of European cotton mills. The second was aimed to preserve tropical cane sugar from the too aggressive political protection of beets.

Peru became one of the favored places for the habilitating of cotton and sugar plantations by foreign mills and merchants. Sugar machinery was rapidly perfected. The habit of military dictatorship had been checked and a new group of men, representative of the large plantation interests, came into political power under the name of Civilists to distinguish them from the previous military parties, and from a so-called democratic party of short duration employed by the "científicos" to get rid of the militarists and secure the state management for themselves.

The central idea of the Civilist or scientific period was the same as that of its predecessors with the addition of science and technology and the attempt to imitate the factory system in the organization of plantations with cheap labor and mass production of a single crop. The "encomienda" or "reparticion" system, already referred to in the colonial period, had never been destroyed and was used effectively for

impressing Indians in the mountains to work on the sugar and cotton plantations.

This system, as is well known to all readers of Latin-American history, consists in the legal and customary habit of considering that the Indian population on the land was transferred to the landlord and that its labor belonged to him. Although abolished by law, the Indian population subject to it had never awakened to the fact or, if so awakened, could not leave the land where the custom existed because no other land was available. Under this system the owner of poor agricultural land in the highlands disposed of the labor of his forced tenants and sold it to the plantations on the rich land of the lowlands. When this system alone did not furnish enough labor to the coastal plantations, the Indians were induced to incur indebtedness which they could only repay through years of labor, in many cases the sons inheriting such debts from their fathers, so that in this way a cheap and constant labor supply was assured to the sugar and cotton plantations.

The system still exists, although to a less extent than during the beginning and middle of the scientific period. It is evident that the economic institutions, having been deprived first of Negro slave labor by the law of the country and by international opinion, and later of Chinese slaves by an edict of the Chinese Government, were required to use the "encomienda" or "reparticion" system again to sustain the plantation system.

The "científicos", however, as they should be called, in their effort to apply scientific mass production of a single crop to agriculture accomplished certain things which were necessary in any case before further progress could be accom-

plished. They caused inventories of water supplies and irrigable lands to be made. They had estimates made with designs for the construction of irrigation works. Government bureaus and surveys were established to collect statistics of certain export industries. An agricultural school was organized to study the technique of production of the great export crops, cotton and sugar, and the breeding of livestock suitable for large plantations. Taxation, weak and haphazard since the early republican period, became a stronger and more consistent political habit. Public revenues increased from five million dollars United States currency in 1899 to 17 millions in 1913. The need was recognized of reforming irrigation institutions. A fairly good irrigation code, adapted from the Spanish code, was promulgated. Technical commissions were appointed to administer this code.

However, in all this scientific and technical effort toward the development of natural resources, no recognition whatever was given to the value of the Peruvian population itself as a natural resource for the development of a national economy. In the study of irrigation possibilities the idea of crop production under the plantation system and for export with cheap peon labor predominated. The doctrine of selling sugar abroad for gold and paying labor at home in silver or in depreciated paper currency became stronger and stronger. The balance of trade and the rate of exchange became more and more the chief concern of ministers of finance, bankers, brokers and merchants. In spite of the high war prices for cotton and sugar, however, the money from these "standard" crops did not stick to the hands of the Peruvian plantation owners and plantations passed more and more to the ownership of the countries that bought

these crops. To-day 75% of the sugar plantations and mills of Peru are owned by foreign corporations. When, during the scientific period, the idea of using small farm units in the development of irrigation projects was accepted in principle, the supply of cheap plantation labor at home was to be conserved by giving preference to foreign immigrants for the colonization of the projects.

Although the irrigation code protects the small water user under the principle of beneficial use, illegal ordinances were approved which opposed the provisions of the code and left the small farmer at the mercy of syndicates or water-users' associations elected by methods which excluded owners or irrigators who held less than 25 acres and granted exclusive power of administration in direct proportion to the size of the plantations.

All the public lands susceptible of irrigation had during this and previous periods fallen into the hands of private owners. The old Indian communities had been recognized in the colonial period and organized in municipal districts. The communal property had gradually developed into individual proprietorships within the communities; but no land survey or system of registration for titles had been made compulsory. It became possible therefore for plantation owners to extend their properties at the expense of the small farmers in the following way. Illegal ordinances enabled the water supply of small farms to be reduced. The lack of a habit of registration of small farms enabled large land holders to eject adjacent small farmers. A combination of the two circumstances made it possible for plantations to become creditors and ultimately owners of neighboring lands of the rural populations. In this way slowly the class of small farmers has retreated before the plantation sys-

tem. In one valley the small proprietors have been practically all replaced by four sugar estates owned chiefly by foreign capital and producing $\frac{1}{2}$ the sugar exported.

Although extension of the plantation system has aroused an interest in new irrigation works, the engineers of the irrigation service advised against building them to extend the plantation system on the grounds (1) that this system was not sufficiently efficient to pay for the works and (2) that it could not maintain an efficient labor supply under the system of peonage. The plantation owners themselves feared that settlement of irrigation projects by the Peruvian population itself would raise agricultural wages and reduce the supply of peons.

The outstanding features of the period of the "cientificos" were, therefore, a growing desire on the part of plantation owners to build irrigation works to extend their system of production, a belief that the system could not, however, repay the cost to Government, and a possibility still to increase the plantation system through monopoly of water and absorption of small farms. The "cientificos" introduced better technique in the measurement of water and developed a better plantation technology.

The great achievement pointed to by "cientificos" is the increase of exports of the main plantation crops, cotton and sugar. The combined value of exports of these in 1900 was \$8,000,000 and in 1928, \$45,000,000 in United States currency. On the other hand, in 1900 the value of foods producible on small farms at less than import prices was \$1,500,000, and in 1928, \$16,000,000 of the same currency. The value of exports of plantation crops had increased five times and that of imports of foods highly suited to production on Peruvian

small farms, at less than import values, had increased 10 times.

With the year 1913 as a base, the cost of principal articles of food had advanced from an index value of approximately 50 in 1900 to 180 in 1928. Agricultural wages on coastal plantations had, however, increased only from 37 to 48 cents United States currency, or 30%, in the same period, as compared with the above indicated increase of 260% in food prices.

While these tendencies were being developed with growing strength each year, the "cientificos" made no effort to take a census of population, general production, total wealth or total income. The methods of measuring the flow of water in rivers were improved and an irrigation code adopted but illegal ordinances or rules of interpretation converted the code itself into an instrument to defeat its own purposes. The central idea continued to be Mercantilist and has continued to influence political and economic life to the present; the old structures were sustained by established interest and old policies continued until the foundations of new ones have been well established.

The Agrarian Period. However, under the first administration of Leguia (1908-1912) tendencies toward the modification of irrigation policies and institutions began to appear. This is evident in executive resolutions and decrees enforcing certain principles of the code aimed to protect the small irrigator. Such decrees with occasional congressional enactments continued down to the end of the scientific period and foreshadowed the policy of the agrarian period.

Not until the beginning of the second period of Leguia in 1919, however, did a marked change begin to take place in irrigation policies and institutions. This

change has gradually brought a challenge to the "cientificos."

The central idea of the irrigation policy initiated in 1919 is agrarian. "Agrarian" in this case is taken to mean an organic system of agricultural production based upon a preponderance of small farms, varying from 12 to 100 acres, the smaller size predominating. Agrarian policy aims to obtain the greatest number of farm proprietors rather than the largest size of rural estates. It seeks to increase diversified farming and animal husbandry, repeal illegal ordinances creating water monopolies, define water rights, teach economy in the use of water, stimulate formation of farmers' associations and develop rural community life. It takes as fundamental that no people are better fitted to bring the agricultural lands of the country under cultivation quickly and cheaply than are the Peruvian people themselves. It postulates that the plantation system depresses all standards of the social aggregate, that it is economically, socially and politically inefficient, and that home markets built up by increasing the consuming power of the people are better than foreign ones maintained by reduction of that power.

IV. Social Material Available for Agrarian Policies

What about the quality of human material available for this agrarian policy? Have a people accustomed for so many generations to the serfdom imposed by the plantation system developed serious defects for the objects of rapid and successful settlement of irrigation projects? The plantation owners themselves maintain this and some sociologists who have visited the towns and fashionable clubs of Latin America on their summer vacations also indirectly

support the same idea. The mass of material available for the settlement of irrigation projects is, however, good.

When the plantations wish to prepare new lands they let the land free for a year to a peon. In less time than that the ground is leveled and one or two crops are produced. The owner then either takes the land back into the plantation, or if he can obtain from it the kind of crop he wants, lets it at a rental of from $\frac{1}{8}$ to $\frac{1}{2}$ the crop. The plantation owner recognizes a valuable quality in the peon when he gives him land under these conditions and then keeps him as a tenant under such rentals.

Peru is a country of deserts and mountains and agricultural communities separated from each other by great obstacles of distance and topography. People who would leave their communities and go elsewhere can find no economic or social structure to receive them under conditions that make the change worth while. They are not comparable in this or in other respects to settlers on irrigation projects of the United States. We have used the word "settler" and "farmer" because they are familiar to the North American reader, and convey something like the idea it is wished to convey. Those who have followed the history of irrigation in the United States remember that there the settlers were too often from a class which either was not accustomed to farming or had through some years or generations of city life lost touch with it. They brought to the farm valuable knowledge and standards of another type which have in the long run been a great benefit, but they were not so well qualified at first to take hold of the plow, the hoe or the spade and use them effectively for producing crops on irrigated land.

Those who settle Peruvian irrigation projects are from the same or adjoining

or similar neighborhoods and represent a surplus agricultural population seeking to make new homes under circumstances similar to those characterizing the communities where their fathers live, and where the average value of farm land is at least 20, if not 30, times the average value of such land in the United States as a whole.⁴

The prosperous small farmer of Peru lives in an adobe house with cleanly swept dirt, adobe or brick floors. There is often a well and in any case the drinking water is filtered through jars of porous volcanic stone. Immediately about the house is usually a garden containing grapes, figs, mangoes, alligator pears, custard apples, oranges, lemons, bananas and other fruits unknown in North America, with some times apples, pears, coffee, tobacco, coca and aji. Settlers on new projects begin with a small cane hut of one or two rooms. In a climate where the winter temperature never falls below 50 degrees Fahrenheit this type of construction makes a sufficient shelter. Later the cane walls are plastered with mud, and finally the adobe house described in the preceding paragraph is reached.

The social material produced in the communities we describe, and comprising also a large part of the people to-day on the margin of these districts, are not as submissive in spirit as might appear from the sketch that has been given. The Peruvian people have accepted many things because no other alternative has presented itself. The entire economic, political and social scheme of things has simply ignored them. They have preserved many

valuable community customs from remote times and adopted others from the Spanish regime. But the Inca had developed only a primitive and semi-tribal form of municipal government and Spain brought a more or less formal and static type of municipal idea.

One reason why Negro and Chinese slaves were brought during the colonial and pre-scientific periods was that the Peruvians themselves did not make good slaves. During these periods millions of Peruvians were wiped out not only because they could not stand the labor imposed by the plantation system in the coastal climate so well as the imported labor, but also because they sought to escape and in so doing were captured, placed in stocks, maltreated, browbeaten, starved, and, if they lived, brought back to waste away under a meager diet eked out with cheap rum. A significant part of the residue that was left was composed of those who had been able to retain some economic instrument of defense as a piece of land.

The revival of the "encomienda" and "reparticion" system under the "cientificos" also soon reached a point where it could not easily supply all the labor required by the growing plantation system. In the highlands of southern Peru the population offered open resistance to the survival of forced impressment and to the monopoly of land and water rights. In northern Peru a similar situation was beginning to develop. From colonial times the rural communities throughout the country have defended themselves in all ways possible against encroachment of the plantations, although the latter have generally gained because their owners have controlled the legal and administrative machinery and because those in charge of the machine have worn Mercantilist spectacles.

The Peruvian rural population have,

⁴Farm values in Peru are compared with those in the United States as a whole in order to emphasize the contrast between conditions in the two countries. In Peru farm land values are high because irrigation is a general condition, while in the United States it is only a local condition.

therefore, not accepted the low standard imposed upon them without protest nor have they been lacking in ambition to raise their standards. It may be said that even when so raised that standard would still be inferior in many ways to that of similar populations in the United States or parts of Europe. True, but that is beside the point. The aim of Peruvian irrigation policy is not simply to imitate foreign standards. Its aim is to raise the standards of the country and keep them national in character, not by imitation alone, but by development of intrinsic qualities and habits already formed and appropriate to the environment.

The fact that two great American Republics have owed their rapid advance at a certain stage to European immigration has suggested sometimes the use of the same process to colonize irrigation projects here. From what has gone before it will be evident that Peruvian conditions hardly admit of that method at present. If foreign settlers are introduced on any scale worth while, they will only further displace home elements and increase the numbers here available for the extension of peonage. The effective density of areas already settled and capable of sustaining populations is already in excess of 100 per square kilometer, reaching twice that in many cases. Foreign colonists on irrigation projects would be hard to select (under the best selection), would require social assistance in adaptation, increase the cost of colonization and introduce other problems of a difficult nature.

V. Construction of Projects under Agrarian Policy

The Cañete Project. The first irrigation project was completed in 1924. It lies 120 miles south of Lima, and comprises 20,000 acres expropriated from private

estates by act of Congress at a cost of \$18 United States currency per acre. Half the lands unfortunately were left in the hands of the original owners who must, however, pay full value for water rights the same as settlers. The cost is amortized in 25 annual instalments without interest. The cost per acre was \$120 and the yearly payment is therefore \$4.80 per acre. Sales were made in lots varying from $2\frac{1}{2}$ to 100 acres.

Of the 10,000 acres colonized, 2,500 acres were in lots of 100 acres each, 1,600 in lots of 70, 1,500 in lots of 50, 600 in lots of 25 and the balance of 3,790 acres in lots varying from $12\frac{1}{2}$ to $2\frac{1}{2}$ acres, practically 1,000 acres being in the smaller size. Within 24 hours after the opening of this project to settlement, the land was all sold. Two thousand petitions had to be turned down. The only areas remaining uncultivated at present are those left in possession of plantation owners and not forming part of the colonization scheme.

The project produced in the year 1928 crops of a wholesale value of \$2,000,000. The Government received from this land through the sale of guano a net income of \$50,000, \$80,000 through the amortization of titles and \$200,000 in revenues of various kinds resulting from increased consumption on the area through exchange of products produced on the lands. United States currency is referred to. No agricultural banks have assisted in getting this result, although local merchants and cotton gin owners habilitate cotton growers.

Vineyard and orchard crops are being extended; also animal husbandry suitable for the small farm. The Government maintains a demonstration station to assist in the process of diversified farming and animal husbandry.

From the point of view of the Peruvian Government the Cañete project has

been a great success. It has demonstrated the possibilities of Government irrigation policy using the social material at hand and has shown that this material is one of the country's greatest resources.

The project has three defects: (1) It left so much land in the hands of the plantation owners; (2) interest was not charged; and (3) the project is too small to produce any striking effect upon national economy as a whole.

Upon the completion of this project, therefore, it was decided to undertake another which would be of greater national importance and which also would be lower in cost with interest charged. In central and southern Peru, although the social material for settlement is, if anything, better than in the north, it is difficult to find a reasonably cheap project with an area of more than 30 or 40 thousand acres in the South occurring so well related to social material as in the North. The cost in the Center and South seldom falls below \$150 per acre, and although the small farmer gives a value of from \$500 to \$1,000 per acre to the land he owns, it had been early decided that projects requiring payment of more than from \$120 to \$150 per acre, including the cost of land, should not be attempted.

The Lambayeque Project. In the north of Peru, the lands are in general more fertile and the cost of irrigation works is generally less than \$80 per acre. A project was selected in the Department of Lambayeque because the social material available in relation to total area and unit cost is better than elsewhere. Cost per acre including cost of expropriation of land and building of reservoirs does not exceed \$80 per acre, including interest on disbursements during the construction period at the rate of 7% per annum. A careful census and social

survey has been made of this Department.

Thirty-three per cent. of the number of families own or rent farms. The ratio of tenants to total farms operated is 40%. This is only 2% more than in the entire United States. Out of a total of 6,385 proprietors and tenants, 5,545 use land in areas of less than 25 acres each, 500 in lots of between 25 and 50 acres each, 155 in lots of 50 to 75 acres, and only 185 farms are held in lots larger than 100 acres. On the other hand, 25% of the total farmed area of 162,000 acres is owned by seven estates. Thirty per cent. of the number of heads of families are illiterate.

The registered demand for land according to this census shows that over 75% of the demand is for lots of less than 25 acres. The registered demand for the 140,000 acres to be included in the first stage of the project is 100% in excess of that area.

Before the settlement of lands in Cañete the water rights of the former users had to be defined. In Lambayeque a similar definition had to be made. This was done in Cañete with only slight opposition on the part of the plantation owners whose monopoly control of water rights has already been referred to in general.

In northern Peru, however, much more serious opposition has been made to the definition of water rights. There abuses have been of a striking nature. Large plantations paid three centavos for an irrigation unit and the smaller farmer as high as one sol and sixty-four centavos for the same unit. A large part of the area to be irrigated represents small farms which two generations ago were irrigated but which had been deprived of water through the extension of the plantations.

Formerly water was allowed to run

day and night, the entire stream being apportioned in arbitrary percentages, the large estates getting all the flow at low stage, and no one in proportion to the area cultivated. This continuous flow has now been replaced by a system of administration based on fixed absolute volumes per application per acre. The rights are fixed by a survey of land cultivated. These surveys are checked by photographs from the air. Titles to these lands are required to be registered. Squatter's rights are recognized and registered as a basis of title. No one can receive two irrigation units per unit of land before everyone else in the district has had the opportunity of asking for and receiving one. Each delivery unit or application is charged with a delivery price equivalent to four cents United States currency per acre to cover administration and maintenance. The average number of units delivered per acre per year has been 15. New works will be amortized with interest and administration charges added.

VI. Ability of Settlers to Pay

Much has already been said under the caption of "social material available" that relates to the paying ability of these settlers. The usual way of estimating this is to take the value of yearly production of money crops. This system is also adhered to in Peru and is probably the only safe system. Yet it is affected by realities that add value to small farms quite apart from the capitalized value of rent or net earnings on money crops and which add to the willingness to pay. The single money crop system of farming ignores the fact generally that the farmer is a consumer as well as a producer and that he, unlike the manufacturer, can consume what he produces. From what we have already said, it will be apparent that ownership of lands is

the only way toward more economic liberty for the greater part of the Peruvian population.

These facts give unusual value to land in small farms. On the deltas of the coastal rivers and up the narrow valleys which approach the Andean plateau, small farms have a value that seldom falls below \$500 per acre, and often reaches \$1200. If you try to buy one of these farms you will frequently be asked by the owner, "What would I do with the money?" The values stated are not taken from abundant registrations of sales or exchanges of land, as such exchanges do not often occur. They include, however, such registrations as are available, the capitalization of recorded rentals, and data from notes of engineers who have had to deal during the past 25 years with valuations of land.

On the Cañete project the charge for land and water rights per year was, as already stated, \$4.80 United States currency per acre. These charges have been readily met by the small farmer. The plantation owner is the one who has tried to avoid payment. The large owner regards this charge as a tax from which the Mercantilist single crop economy should be protected.

The average value of crop per acre on the Cañete project has been \$96 per acre per year. It has been fairly well demonstrated that the Cañete small farmer could pay much more than \$4.80 a year on his land and water rights.

On the coast of Peru there are two classes of charges for land and water at present. In the case of share tenants or "yanacones" there is a charge of from $\frac{1}{3}$ to $\frac{1}{2}$ of the crop estimated sometimes with and sometimes without a charge for water. The share tenant system occurs mostly in cases like those previously described where a plantation owner wants to get a new piece of land

under cultivation quickly and keep on his estate some tenants who will produce the same crops that he sells. The other cases of rental are where smaller independent holdings are rented and in these cases less than $\frac{1}{3}$ of the crop is generally paid plus the charge for administration of water.

Both these classes of rentals occur in northern Peru in the Lambayeque district. The minimum rental there paid in money is equivalent to 10% of the gross value of the crop. The average rental is 12% of this value. The average annual value of crops, excepting sugar and orchard crops, is equivalent to \$48 per acre per annum United States currency. At present the average rental is \$5.76 and the average charge for water is 80 cents United States currency per acre per year, making a total of \$6.56 per acre per year for rent of land and water. For less than this amount title can be given and water rights delivered on the project, under the system of assessing the full charge with interest against each unit of land with amortization and interest during 30 years.

The value of orchard crops in the Lambayeque department is more than 10 times the average value above given of \$48 per acre. These crop values do not include one of the most important items in the small farmer's account, that is, the income from the sale of farm animal products, such as pigs, chickens, eggs, milk and cheese.

VII. The Facility of Collection of Charges

The facility to collect charges for government irrigation works depends upon a number of factors. Among these are ability of the irrigator to pay, directness of application of the charge, ease with which it may be understood and the political habit and power of the collecting authority.

The ability of the irrigator has already been referred to. A charge for land and water right or for delivery of water evidently satisfies all conditions except the last.

Since the reaction against Spanish taxation, Peru has had a weak taxing habit. Low average production per capita, poor communication and means of collection and other things protected the prejudice against taxation. The national treasury probably does not receive more than 10% of the annual income of the population. The greater part of this is from indirect taxes. Local and municipal taxes are slight, not more than 2 or 3% of the national production.

A charge for irrigation service is not a tax, but the tendency above referred to will affect the collection of charges. Irrigation payments are charges or prices for a continuous service just as the service of light or power, based upon units consumed. This manner of regarding them, combined with a certain charge for acquisition of title, is believed to be the best way to obtain economy in the use of water and get a convenient distribution of cost.

There is no reason why the general budget should bear the expense of irrigation policy without complete return for interest and amortization. Economic and social reasons abound for collecting project charges from the projects themselves. In the case most unfavorable for the budget, irrigation may be credited with a part of the increase in state revenues attributable to increased production and consumption on the projects and the balance charged in part as a title fee and in part as a price for a unit of the service of a public utility. The matter of collection of charges in any case, is, therefore, in the last analysis political, a question of intention rather than of economic ability.

VIII. Summary

In placing the irrigation problem of Peru before the readers of this *Journal*, an attempt has been made to connect it as clearly as possible with the general economic and social structure and ideas out of which the problem arises. The physical bases of the problem are those of a country where all habitable regions are necessarily irrigated or accustomed to irrigation as an aid to farming. The social organization, however, has been developed from ideas derived from the Mercantilist colonial theories of the 16th and 17th centuries and persistently applied through different periods down to within the past few years.

The first of these conditions, the physical basis of nationality, makes irrigation in Peru a fundamental part of public policy. The second, a deductive and exotic theory of social economy, brings the policy of extending irrigation into conflict with an inherited and strongly established social and political complex now challenged for the first time by the need of giving larger values to land and water. Land in small lots is worth from two to five times more per acre than lands in large estates, and the average price of small irrigated farms in Peru, from 20 to 30 times the average value per acre of farms in the entire United States.

The present irrigation policy is based upon the theory that agriculture organized in large plantations with cheap labor for the production of a standard crop cannot meet the law of diminishing returns. It seeks to use, first, the social material of the country to induce diversified agriculture in small farms, believing that the available population is sufficient in mass and quality to give the highest possible value to land and water.

The first project constructed under this policy has been successful. Land

sold to settlers at \$120 an acre can hardly be purchased from them at any price. Five years after the first sale a few rentals indicate values of from two and one-half to five times the purchase price. On other projects now under construction in northern Peru the demand is estimated to be twice the supply of 350,000 acres to be offered for sale during the next four or five years.

Many problems such as schools, marketing methods, marketing policies, rural credits, etc., are being studied in connection with these projects, but lack of space prevents dealing with them here as well as with the many interesting physical features of the new projects.

The small farmer is able to pay the project charges at present farming efficiency. As that efficiency increases, ability to pay will increase provided construction of projects does not proceed too fast. However, this is unlikely. A present home market exists for agricultural products now imported to the value of \$16,000,000 per year, and capable of being produced at home at not to exceed that cost. The irrigation projects themselves will increase home markets for crops now exported as well as for other products of the country itself. The foreign markets for diversified crops, which are produced in Peru at seasons when the same crops are not available in the northern hemisphere, are quite large.

The solvency of new projects will, therefore, depend upon administration of the general taxing power and upon collection of charges for irrigation service, rather than upon demand for and value of land. The physical bases and social material exist under conditions making possible the creation of large economic values. The fiscal part of the problem depends upon political will and conviction more than upon economic ability.

Irrigation thus provides Peru with definite economic and social motives for political action.

Shall new irrigation projects be used to extend peonage and the plantation system, or devoted to the building of farming communities? Shall they be settled with foreign immigrants or by the surplus rural population of the country itself? Shall payment of project costs be made by assessments exclusively upon new lands and water rights, be satisfied in some other way to include indirect and direct revenues from increased consumption of the new communities, or shall all costs be paid out of the general budget? To what extent will efforts to colonize the remote hinterlands of the humid Amazon basin affect the now paramount importance of irrigation?

The matter of the preceding subtitles is synthesized briefly by these questions with the exception of the last which is referred to here for the first time because it is related to the general problem of national development in a way that affects irrigation.

In the fiscal history of Peru railroads for many years held the right of way and often to the exclusion of other public works. Most of the public credit employed in building these roads has been in favor of trans-Andean routes.

Furthermore, the road and railroad program has been executed chiefly about routes of penetration across the highest parts of the trans-continental divide at elevations around 14,000 feet in order

to cross well known and previously capitalized zones of mineralization. In northern Peru, however, the Amazon basin can be penetrated at its broadest and deepest part by routes crossing the Andes at elevations of only 7,000 feet, and by means of tunnels of easy construction this may be reduced to 4,000 feet. These northern routes also cross the most promising irrigation projects and are now known also to traverse coal fields and regions of possible oil development.

All the questions arising out of irrigation in the first instance may therefore be united into one problem of development, where diverse sectional differences vanish in the stronger need of a common means of communication for different economic regions, forms and motives.

Finally, a long established concession habit, the growing interest of United States capital in Latin America, and the influence of foreign interests upon Peruvian fiscal policy may introduce new factors into the situation. The history of what we have called the Agrarian period, just appearing in a form sufficiently definite to justify a distinctive name, thus depends upon the combination of a series of forces within and without the country. All are directly connected in their origins with irrigation and are related through irrigation to the general problem of land and public utility economics in a way that vitally affects the development of Peruvian nationality.

REGULATION OF THE INTERSTATE TRANSMISSION OF ELECTRIC POWER*

By T. C. BIGHAM

THE recent demand for the public regulation of holding companies, particularly in the electric light and power industry, has called forth a number of proposals for controlling the interstate transmission of electricity which has followed in many, though not all, cases from the consolidation of control by holding companies of contiguous central station systems. The most important of these proposals are: (1) leave control as it exists at present;¹ (2) form compacts for joint regulation among the states concerned;² (3) delegate to the state commissions the power to act as agents of the Federal Government in regulating interstate transmission;³ (4) extend the power of the Interstate Commerce Commission over interstate transmission;⁴ or (5) create regional federal commissions.⁵ These plans which, it is to be understood, relate not only to interstate transmission but also to other holding company operations outside the jurisdiction of state commissions, should be subjected to a critical analysis from both the legal and the economic points of view. Before proceeding with such an analysis, however, it is necessary to explain briefly the developments in the

electric light and power industry and the court decisions which have given rise to the problem.

I. Development of the Interstate Market.

In 1885 the industry was revolutionized physically and economically through the development by Mr. William Stanley, Jr., at Great Barrington, Massachusetts, of the alternating current.⁶ This meant that the advantages of economical high-voltage transmission could be enjoyed along with the equally important advantage of safe, low-potential current on the premises of the consumer; lights and motors could be supplied with energy from the same source; the area of distribution could be enlarged; and production could be centralized in large plants. All the attendant economies of large-scale production and interconnection could be realized.

Since that time, due largely on the one hand to the decreased cost and increased reliability of electrical energy which resulted from these economies, and on the other hand to the increased

*EDITORIAL NOTE: Professor Bigham's article covers in part the same subject matter discussed by Professor Crawford in the August *Journal*. Since the present article expresses somewhat different views and discusses certain phases of the subject which were not dealt with by Professor Crawford the editors are glad to publish this article, even at the risk of some repetition of subject matter.

¹ See address of President Hoover in 1925 before the National Association of Railroad and Utilities Commissioners, *Proceedings*, pp. 262-271.

² John H. Gray, "The Dilemma of Giant Power Regulation," 129 *Annals of the American Academy of*

Political and Social Science 114 (January, 1927); Philip P. Wells, "Federal and State Relations in the Control of Power Development and Distribution," *ibid.*, p. 131.

³ George W. Anderson, "State Commissions as Regional Federal Commissions," *Proceedings of the National Association of Railroad and Utilities Commissioners*, 1920, pp. 32-42; Federal Power Commission, *Annual Report*, 1928, p. 13.

⁴ John H. Gray, *op. cit.*, p. 113; O. C. Merrill, "Federal Versus State Jurisdiction Over Power Development and Its Supervision," *Ibid.*, pp. 136, 137.

⁵ C. O. Ruggles, "Regulation of Electric Light and Power Utilities," 19 *American Economic Review, Supplement*, 179-196 (March, 1929).

⁶ Bureau of the Census, "Central Electric Light and Power Stations, 1902," Ch. 8, pp. 86-104.

demand for central station service, the industry has enjoyed a marked growth. Our first central station (1882),⁷ with its capacity of 64.2 kilowatts, its 13 miles of transmission line, and its 59 customers, has been surpassed by huge plants and by interconnected systems covering many communities and often two or more states. This remarkable expansion in less than 50 years may be seen by comparing the figures in the preliminary report of the 1927 Census of electrical industries, which have recently been released, with those contained in the Census of 1902. Central station output since 1902 has increased 2,877%; the number of customers 1,019%;⁸ and the total horsepower of prime movers 1,830%. Since 1922 the average size of generating plants, as measured by the capacity of prime movers, has increased from 3,728 horsepower to 8,120 horsepower.⁹ In other words, the average plant has more than doubled in size within a period of five years; the number of plants has decreased 19%. There are individual plants designed for an ultimate capacity of 1,000,000 horsepower, for example, that of the State Line Generating Company at Hammond, Indiana.

The interconnection of plants has been no less striking than the increase in their size. Twenty-five years ago there was on the average at least one commercial generating station for every town served; today there are more than six towns for each station. In 1922 over 60% of the commercial establishments

purchased all or a part of the power which they distributed. The southeastern superpower system, fully interconnected, embraces over 140,000 square miles of territory and serves directly over 4,000,000 people. A main trunk line, operated at 100,000 volts, extends 800 miles through Alabama, Georgia, South Carolina, and North Carolina.¹⁰ Another extensive system is to be found on the Pacific Coast.¹¹ These, of course, are but examples of what is taking place throughout the industry.

Physical integration has been accompanied by a rapid concentration of control. In 1924 holding companies controlled 77.7% of the kilowatt-hours generated.¹² Three holding company groups, the Electric Bond and Share, the Insull interests, and the North American Company controlled 28.3%. The *Electrical World* of January 5, 1929 reported that 80 holding companies had acquired during 1928 more than 800 operating companies and 55 minor holding companies. Of these operating companies 65 were acquired by the Electric Bond and Share and 139 by the Insull interests. During the last quinquennial census period the number of commercial establishments, as distinct from number of plants, decreased over 43%. More recent figures doubtless would indicate still further centralization of control and absorption of independent generating stations.

This rapid growth in the scale of operations, the physical integration into larger and larger systems, and the consolidation of control through the medium

⁷ C. F. Scott, "The Beginning of Superpower," 21 *Electric Journal* 200 (May, 1924); Bureau of the Census, *op. cit.*

⁸ The number of customers was taken as of 1907, inasmuch as this item was not reported in 1902.

⁹ The number of separate generating plants was not reported prior to 1922.

¹⁰ C. G. Adsit, "The Interconnected Power Systems of the Southeast," 50 *Proceedings of the American Society of Civil Engineers* 1286-1302 (1924).

¹¹ A. H. Markwart and H. A. Barre, "Regional Review of Power Resources, Distribution and Utilization for Pacific Coast States, U. S. A.," 1 *Transactions of the First World Power Conference* 564-613 (1924).

¹² Federal Trade Commission, "Control of Power Companies," pp. 38-39. On integration see also E. O. Malott, "Integration of Public and Private Electric Plants in Wisconsin," 4 *Journal of Land & Public Utility Economics* 355-366 (November, 1928).

of holding companies have brought about the interstate transmission of power. Economies to be secured from large-scale production and from fuller utilization of plants, within limits, have made it more economical, in cases where the costs of interconnection do not offset these economies, to supply power from a relatively few large plants. Holding companies have aided in creating the unity of control essential to the lowest system cost.

Interstate movement may take place (1) where a water power site or a favorable location for a steam power plant is situated in one state and the market for power is located in an adjoining state; (2) where the normal expansion of a company's business carries it into a neighboring state; and (3) where the interchange of electricity between companies on opposite sides of a state boundary results either from a normal diversity in the demand for or production of power, or from a temporary surplus or deficiency of power because of seasonal or cyclical variation in the availability of hydro-electric energy.¹³ Presumably most of the interstate sales take place under the first and third conditions, but there are no figures to indicate their relative importance. The latest comprehensive data, those published by the Bureau of Business Research of Harvard University in 1927, show that in 1926 power interchange of a more or less temporary character accounted for only 16.7% of total interstate power.¹⁴ According to the same authority the total electric power transmitted across state lines in 1926 represented 9.06% of the total number of kilowatt-hours gen-

erated by electric light and power companies in the United States. Inasmuch as about three-fourths of the interstate power is transmitted at voltages of over 33,000, the relatively larger number of installations of high-voltage lines since 1920 as compared with the number of low-voltage lines indicates that interstate transmission is growing at a faster rate than generation.¹⁵

II. Regulation of Retail and Wholesale Transmission.

In 1927 the United States Supreme Court definitely held in *Public Utilities Commission of Rhode Island and Narragansett Electric Lighting Company v. Attleboro Steam and Electric Company*¹⁶ that such transmission of electricity across state lines is interstate commerce. The Court said:

"The transmission of electric current from one state to another, like that of gas, is interstate commerce, and its essential character is not affected by a passing of custody and title at the state boundary not arresting the continuous transmission to the intended destination."

This decision meant, of course, that the interstate transmission of electric power is subject to the exclusive control of Congress, even though Congress has not passed a law subjecting it to regulation by the Federal Government. Chief Justice Marshall in 1824 in *Gibbons v. Ogden* had laid down the rule that the power of Congress to regulate interstate commerce, granted by the commerce clause to the Federal Government, is not only paramount but also exclusive of any power in the states, and that the inaction of Congress is an expression of its

¹³ Information from W. M. Carpenter, statistician for the National Electric Light Association.

¹⁴ Bureau of Business Research of Harvard University, "Interstate Transmission of Power by Electric Light and Power Companies in 1926," *Bulletin No. 68*, pp. 2, 4.

¹⁵ See Ruggles, *op. cit.*, p. 187. The data found in *Statistical Bulletin No. 2* which was published in 1928 by the National Electric Light Association are not comparable with those contained in the Harvard Bulletin.

¹⁶ 273 U. S. 83 (1927).

intention that such commerce shall be free from the imposition by the states of any substantial or material burden, restraint, or regulation.¹⁷

The Attleboro decision did not mean, however, that the states were prohibited in all cases from regulating that part of interstate transmission which was purely local in nature. Long before in *Cooley v. The Board of Wardens of the Port of Philadelphia*¹⁸ the United States Supreme Court had decided that in the regulation of the subjects of interstate commerce which were local in their nature and which did not demand a uniform rule of regulation, the states may act during the non-action of Congress. The *Cooley* decision was applied to the interstate transmission of gas in 1919 in *Pennsylvania Gas Company v. The Public Service Commission*,¹⁹ and by analogy to the interstate transmission of electricity in 1927 in the Attleboro decision. The question at issue in the gas case was whether the Public Service Commission of New York could order a reduction in the gas rates charged against the consumers of Jamestown, New York, by the Pennsylvania Gas Company for gas which it produced in Pennsylvania and sold directly without change in ownership to the consumers of Jamestown. The Court said:

"The thing which the state Commission has undertaken to regulate, while part of an interstate transmission, is local in its nature . . . This local service is not of that character which requires general and uniform regulation of rates by congressional action . . . It may be conceded that local rates may affect the interstate business of the company. But this fact does not prevent the state from making local regulations of a reasonable character."

But not all interstate transmission of gas or electricity is purely local in na-

ture, and that which is not—gas or electricity sold by a generating or transmitting company to a distributing company which in turn sells to consumers—cannot be regulated by a state, even in the absence of regulation by Congress. With respect to gas, this point was decided in 1924 in *Missouri v. Kansas Natural Gas Company*.²⁰ The question presented was whether the Public Utilities Commission of Missouri could regulate the charges made by the Kansas Natural Gas Company for gas which it produced and bought in Oklahoma and Kansas, transported into Kansas and Missouri, and sold to distributing companies in each state. The Court said:

"The sale and delivery here is an inseparable part of a transaction in interstate commerce—not local but essentially national in character—and enforcement of a selling price in such a transaction places a direct burden upon such commerce inconsistent with that freedom of interstate trade which it was the purpose of the commerce clause to secure and preserve."

With respect to electricity, the point was decided in the Attleboro decision by analogy, as in the instance of the Pennsylvania Gas Company. The Attleboro Steam and Electric Company, a Massachusetts corporation supplying current for public and private use in the city of Attleboro, was contesting the right of the Rhode Island Public Utilities Commission to increase the rates it was paying to the Narragansett Electric Company of Providence, Rhode Island, for electric power which it was buying from the Rhode Island Company under a 20-year contract. The Rhode Island Company alleged that post-war conditions were causing it a loss, thereby injuring the consumers of Rhode Island, and the Rhode Island Commission had therefore allowed the Company to raise its rates.

¹⁷ 9 Wheat. 1 (1824).

¹⁸ 12 How. 299 (1851).

¹⁹ 252 U. S. 23 (1920).

²⁰ 265 U. S. 298 (1924).

The Attleboro Steam and Electric Company then claimed that the Rhode Island Commission exceeded its authority. This contention was upheld by the Supreme Court. The Court said:

"It is clear that the present case is controlled by the Kansas Gas Co. case. The order of the Rhode Island Commission is not, as in the Pennsylvania Gas Co. case, a regulation of the rates charged to local consumers, having merely an incidental effect upon interstate commerce, but is a regulation of the rates charged by the Narragansett Co. for the interstate service to the Attleboro Co. which places a direct burden on interstate commerce. Being the imposition of a direct burden upon interstate commerce, from which the State is restrained by the force of the commerce clause, it must necessarily fall, regardless of its purpose. It is immaterial that the Narragansett Co. is a Rhode Island Corporation subject to regulation by the commission in its local business, or that Rhode Island is the State from which the electric current is transmitted in interstate commerce, and not that in which it is received, as in the Kansas Gas Co. case. The forwarding state obviously has no more authority than the receiving state to place a direct burden upon interstate commerce . . . Furthermore, if Rhode Island could place a direct burden upon the interstate business of the Narragansett Co. because this would result in indirect benefit to the customers of the Narragansett Co. in Rhode Island, Massachusetts could, by parity of reasoning, reduce the rates on such interstate business in order to benefit the customers of the Attleboro Co. in that state, who would have, in the aggregate, an interest in the interstate rate correlative to that of the customers of the Narragansett Co. in Rhode Island. Plainly, however, the paramount interest in the interstate business carried on between the two companies is not local to either state, but is essentially national in character. The rate is, therefore, not subject to regulation by either of the two states in the guise of protection to their respective local interests; but, if such regulation is required it can only be attained by the exercise of the power vested in Congress."

Thus the situation with respect to the interstate transmission of electricity, as

a result of the foregoing decisions, is as follows: The transmission of electricity across state lines is interstate commerce.

(1) When this commerce consists of the importation of power from without a state by a company which itself delivers and retails the imported power to its customers, the state in which the energy is received may regulate the rates charged to such customers until the matter is regulated by Congress. (2) When, however, the interstate commerce consists of the wholesaling of such energy by an importing or exporting company to another company which in turn sells the power to consumers, the regulation of such commerce is beyond the jurisdiction of the state from which or to which the energy is delivered. (3) When the generation, transmission, delivery, and sale lie wholly within the limits of a single state, regulatory power belongs, of course, to that state.

III. Various Proposed Methods of Regulation.

It is anent the second set of circumstances that the proposals listed in the first paragraph of this paper have been made. With one exception, interstate transmission of this character is at present unregulated. The exception is the control by the Federal Power Commission, under section 20 of the Federal Water Power Act, of wholesale interstate transactions made by its licensees.²¹ Inasmuch as the installed capacity in the plants of these licensees in 1928 constituted only 12% of the total installed capacity of public utility power plants as reported by the Geological Survey, it is obvious that the wholesale transactions which come within the jurisdiction of the Federal Power Commission are

²¹ See Federal Power Commission, *Eighth Annual Report*, 1928, p. 11.

small in number. This leaves the gap in regulation substantially wide open.

It has been contended that the amount of electricity transmitted across state lines constitutes too small a percentage of generated power to require regulation. But this contention overlooks the fact that the absolute amount is considerable, over 6,000,000,000 kilowatt-hours in 1926, and that in many cases the interstate movement forms a large percentage of generated power. In 1926 exported power amounted to more than 25% of generated power in Alabama, Georgia, Idaho, Iowa, South Carolina, Vermont, and West Virginia; in the case of Vermont the percentage was 94. Imported power amounted to more than 29% of generated power in Arkansas, Kentucky, Maryland, Mississippi, Missouri, Nevada, North Carolina, Rhode Island, and Utah; in the case of Nevada the percentage was 126.²² Statements by public service commissions and the Harvard Bureau of Business Research indicate that most of this interstate power is of the wholesale character—the kind which the states cannot regulate directly.²³ Elimination of all gaps in regulation is so widely accepted as a sound principle that further discussion of the necessity for some sort of control would be superfluous.

²² Bureau of Business Research of Harvard University, *op. cit.*, pp. 6-7.

²³ According to the Harvard study nearly three-fourths of the power crossing state lines changed ownership. This is due in part, as stated in the study, to the peculiarities of the laws of a number of states which require power companies operating within their borders to be incorporated locally or which impose such restrictions on foreign corporations as to make local incorporation practically essential.

²⁴ 209 U. S. 349 (1908).

²⁵ For an analogous decision on game see *Geer v. Connecticut*, 161 U. S. 519 (1896).

²⁶ The prohibition of the export of water power is known as the "Fernald Law," Maine Laws, 1909, C. 244, Secs. 1-3; R. S. (1916) C. 60, Sec. 1. After repeated agitation (See O. C. Hormell, "Maine Public Utilities," Bowdoin College, *Bulletin No. 164* (1927)),

It is conceivable, although undesirable, that control in the case of water power might take the form of a prohibition of the interstate transfer of power by the state in which the power site is located. In *Hudson County Water Company v. McCarter*,²⁴ the Supreme Court of the United States definitely established the power of a state, in granting the right to appropriate the water of running streams for power purposes, so to limit the right granted as to prevent the transmission or use of the power beyond the confines of the state. The decision apparently was based upon the fact that the water was the property of the state.²⁵ The State of Maine followed this policy of prohibition from 1909 to 1929.²⁶

While such a method is thus constitutional, yet economically it is indefensible. It prevents the development of much water power, inasmuch as the surplus power cannot always be sold within a given state; means higher rates, because of hindrance to large-scale development and interconnection; checks industrial growth; and cuts off from other states an economical source of power. In the case of steam power, the prohibition of interstate transmission would be legally as well as economically unjustifiable. In *Commonwealth of Pennsylvania v. State of West Virginia*,²⁷ the Supreme Court declared

the law was modified at the last session, Laws, 1929, C. 280. This law failed to receive approval in the referendum vote on September 9.

²⁷ 262 U. S. 553 (1923). The Court said: "Natural gas is a lawful article of commerce, and its transmission from one state to another for sale and consumption in the latter is interstate commerce. A state law, whether of the state where the gas is produced, or where it is to be sold, which by its necessary operation prevents, obstructs, or burdens such transmission, is a regulation of interstate commerce—a prohibited interference . . . If the states have such power a singular situation might result. Pennsylvania might keep its coal, the Northwest its timber, the mining states their minerals. And why not the products of the field be brought within the principle?"

unconstitutional an act by West Virginia which sought to prevent the exportation of natural gas when the supply was insufficient for public use within the state; had it been steam-generated electricity the decision doubtless would have been the same. Fortunately, with a very few exceptions, the states have not attempted to control interstate transmission by its prohibition.

In discussing the proposal to leave control as it exists at present, i. e., in the hands of state commissions as now constituted and empowered, it is to be pointed out that one state, Delaware, has no public service commission; other states do not control the electric utilities; and still others exercise no control over service, rates, or accounting. Assuming, however, that electric utilities are brought within the jurisdiction of state commissions with adequate powers in all states, as this plan would presuppose, the question arises as to whether control by the commissions would be sufficient to secure justice to all concerned. By virtue of the Attleboro decision, as previously pointed out, they could exercise no direct control. Could they, however, exert an indirect check by passing upon the reasonableness of a charge for power which a distributing company sought to include in its operating expenses? If so, would such regulation be effective?

The answer to the first query is in doubt. It is an accepted principle that disbursements made by a public utility which are to be charged to operating expenses may be subjected to commission scrutiny and approval. In *Reno*

Power Light and Water Company v. Public Service Commission,²⁸ the Court said:

"To be allowable in a rate case, operating expenses must be reasonable. The utility should be permitted to earn the cost of operations and a fair return; but in addition to a fair return it is not entitled to earn whatever it may choose to expend."

Furthermore, if what it "may choose to expend" is made to outside concerns for services or commodities, the payments to these concerns must be reasonable²⁹ or at least not tainted with fraud or collusion. But if the services or commodities are supplied to a subsidiary by a holding company, circumstances under which much of interstate transmission takes place, the power of the commissions is uncertain. The decision of the Court in the Southwestern Bell Telephone Company case,³⁰ in which the Court pointed out that the commissions may neither substitute their judgment for that of the directors of the corporation nor ignore items charged by the utility as operating expenses, unless there is an abuse of discretion in that regard by the corporate officers, seems to indicate that contracts for interstate power could not be disturbed by the state commission. Although the case related to an annual payment for services and not to interstate power, yet had it been concerned with power, the decision, reasoning by analogy, would have been the same. It is to be noted, however, that no evidence of "abuse of discretion" was presented. Had there been, it may be implied from the decision that the commission would have been upheld. The recent United Fuel Gas Company decision³¹ appears to bear out such a conclusion. Here the Court said:

pany v. Public Service Commission, 262 U. S. 276 (1923).

³¹ *United Fuel Gas Company v. Railroad Commission of Kentucky*, 49 Supt. Ct. 150 (1929.)

²⁸ 298 Fed. 790 (1923).

²⁹ *In re Chicago, N. S. & M. R. R.*, 4 Ill. P. U. C. R. 717 (1917). See also David E. Lilienthal, "The Regulation of Public Utility Holding Companies," 39 *Columbia Law Review* 404-440 (April, 1929).

³⁰ *Missouri ex. rel. Southwestern Bell Telephone Com-*

"We need not labor the point that a public service corporation may not make a rate confiscatory by reducing its net earnings through the device of a contract unduly favoring a subsidiary or a corporation owned by its own stockholders. We recognize that a public service commission, under the guise of establishing a fair rate, may not usurp the functions of the company's directors and in every case substitute its judgment for theirs as to the propriety of contracts entered into by the utility; and common ownership is not of itself sufficient ground for disregarding such intercorporate agreements when it appears that, although an affiliated corporation may be receiving the larger share of the profits, the regulated company is still receiving substantial benefits from the contract and probably could not have secured better terms elsewhere . . . But this case is not of that class."

These words seem to be plain enough, but an element of uncertainty arises from the fact that the company was willing to have the system treated as a unit.³² Had the company followed a different policy, it is possible that the decision would have followed the Southwestern Bell case.

Granted, however, that the commissions may legally refuse to approve the terms of contracts for power purchased under such circumstances that better terms could have been secured elsewhere or if "bad faith" or "abuse of discretion" were disclosed, this method of control would not be effective practically; the answer to the second query is in the negative. Disregarding payments for power made on an arbitrary basis or in "bad faith," a state commission, in justifying its disapproval of a contract, would have to prove the contract unreasonable,³³ and to prove this it would have to demonstrate the availability of better terms elsewhere; i. e., it would

have to determine the cost of power bought from another company* or of power locally produced. It could not easily get access to the selling company's records,³⁴ if the company objected. Assuming the charge to be unreasonable, the receiving state could secure no adjustment if the cost of power elsewhere were higher than the contract price. This might well be the case because of an unusually good location, favorable load factor, or other circumstances on the part of the generating company, which company would be entitled to only a fair return on the fair value of its property. If the cost of power elsewhere were less than the contract price, there would be no good reason to purchase power from the generating company. However, if such were the case, the contract, from the standpoint of the transmitting company, might well be reasonable. If it were reasonable, its disallowance in the retailing company's expenses might bring about a readjustment of the contract to the detriment of the transmitting company. As electric power systems become more extensive and more closely integrated, it will be increasingly difficult, without considering the system as a whole, to pass upon the reasonableness of particular charges. Clearly control by this method would be effective only within wide limits; it falls because of not being adapted to the system of organization of the industry.

Interstate compacts—a means of control illustrated by the Joint Giant Power Commission for New Jersey, New York, and Pennsylvania,³⁵ which was proposed late in 1925—involve the creation by the states of joint commissions which would have control over inter-

³² See comments by E. W. Morehouse, 5 *Journal of Land & Public Utility Economics* 95-101 (February, 1929).

³³ See *Northwestern Bell Telephone Company v. Spillman*, 6 Fed. (2nd) 663 (D. Neb. 1925).

³⁴ *Southern Sierras Power Company v. Railroad Commission*, 271 Pac. 747 (1928).

³⁵ Giant Power Board, "Report to the Governor of Pennsylvania," December 7, 1926, Appendix XI.

state transmission among the states concerned. The number and personnel of the commissions would be determined by the specific agreements among the states wherever interstate transmission occurred. Compacts would probably be on a regional basis, paralleling the natural development of the industry.

The legal support for this scheme of control is found in the so-called "compact clause" of the Constitution of the United States: "No state shall, without the consent of Congress . . . enter into any agreement or compact with another state, or with a foreign power."³⁶ In this negative fashion the states are given the power to form compacts, subject to Congressional approval, and the exercise of this power cannot be condemned on the ground of an unconstitutional delegation of Congressional power. Congress does not surrender any of its powers, but merely finds no occasion for its present exercise of them. As in the Webb-Kenyon Act, Congress does no more than so to conform its regulation as to bring about cooperation between the national and local forces of government.³⁷ There are numerous instances of the use by the states of this power in the regulation of subjects which lie beyond the control of particular states, and it is warmly supported by many who fear centralization and who see in it a means of keeping regulation more nearly local in nature.

The great weakness of the plan is the necessity for approval by Congress. Inasmuch as the words "agreement" and "compact" have been interpreted to mean "all forms of stipulation, written or verbal, and relating to all kinds

of subjects . . . which may tend to increase and build up the political influence of the contracting states, so as to encroach upon or impair supremacy of the United States or interfere with their rightful management of particular subjects placed under their control,"³⁸ interstate power compacts necessarily would be of a sort requiring Congressional ratification. The placing of the control of interstate commerce in the hands of the state would not only "build up the political influence" of the states, but would also "impair the supremacy of the United States." It goes without saying, in view of the fact that the states are sovereign, that these compacts would also require the approval of each of the states concerned.

The necessity for Congressional and unanimous state approval would be a less telling objection to this scheme for regulation were fewer states involved or were the thing to be settled a boundary line or other matter which could be settled once for all. But here there are many states and the thing to be controlled is highly dynamic. Even though an original compact were approved, each amendment to the compact would require the same cumbersome procedure of approval and ratification. All will admit the great difficulty and delay which would arise in securing unanimous consent, for example, among the 11 states in the northeastern power zone or among the five or six states in the southeastern power zone. On this point we have the illustration of the failure of the Joint Giant Power Commission and the long-drawn-out controversy concerning the Colorado River.³⁹

³⁶ *Constitution of the United States*, Article 1, section 10, clause 3.

³⁷ See *In re Rahrer*, 140 U. S. 545 (1891); *Clark Distilling Company v. Western Maryland Railway Company*, 242 U. S. 311 (1917). See also Felix Frankfurter and James M. Landis, "The Compact Clause of the Constitution—A Study in Interstate Adjustments,"

34 *Yale Law Journal* 685-758 (1925).

³⁸ *State of Virginia v. State of Tennessee*, 148 U. S. 503 (1893).

³⁹ The problem met by creating the Port of New York Authority seems to have been much simpler than the one under discussion.

It is difficult to see how interstate compacts could have any advantage over control by the Federal Government, and the evils which they would bring in their train—delays, expense, uncertainty, and lack of uniformity—would be worse than the abuses complained of. To the extent that all the states were mutually concerned in wholesale interstate transmission and did set up a joint commission, there would be in effect centralized regulation without the legal advantages of direct federal control; to the extent that only a few states were mutually concerned, there would be in substance regional commissions having no closer contact with local conditions than true regional federal commissions. It is true, of course, that the joint commissions might be composed of members of existing state commissions. Were the instances of wholesale interstate transmission, and other holding company operations of which they are but a part, isolated and few in number, the method of compacts might be tolerated, but such is not the case.

The third of the proposed schemes—delegation to the state commissions of the power to act as agents of the Federal Government in regulating wholesale interstate power transmission—bears a close resemblance to the recommendations of the special committee of the National Association of Railroad and Utilities Commissioners which were embodied in the Cummins-Parker Bill.⁴⁰ These recommendations related to fed-

eral control of motor-vehicles, but it has been suggested that a similar method might be followed in controlling interstate movements of power. Under this plan the state commissions are expressly empowered to administer the federal law. Each commission is to have plenary jurisdiction to act individually in cases of the Pennsylvania Gas Company class, and where two or more states are involved, as in cases of the Attleboro class, the commissions are to be given original jurisdiction to sit jointly or to appoint a joint board. Appeals are to be carried to the Interstate Commerce Commission, or other federal body with the stipulation that appeal be limited to the record. The state agencies are to hold hearings, take testimony, assemble evidence, and determine the issue. In case a state does not accept the duty of acting as agent, the federal body is to assume jurisdiction.⁴¹

Constitutionally the plan seems to be sound. "The power of Congress to regulate commerce among the several states is supreme and plenary,"⁴² and Congress may regulate interstate commerce by any proper and constitutional means.⁴³ State officers, unless prohibited by the laws of the state, may be authorized by federal statutes to perform duties conferred by federal statutes.⁴⁴ Agents do not necessarily have to be federal appointees.⁴⁵ There are numerous instances in which the states have assisted in the execution of a federal law,⁴⁶ and the delegation to adminis-

⁴⁰ United States Congress, Senate, "Hearings before the Committee on Interstate Commerce, on S. 1734, A Bill to Regulate Interstate Commerce by Motor-Vehicles Operating as Common Carriers on the Public Highways, March 22-26, 1926." Sixty-ninth Congress, First Session, 1926.

⁴¹ The states could not be compelled to assume the duty. See *Stoutenburgh v. Hennick*, 129 U. S. 141 (1889); also *Wayman v. Southard*, 10 Wheat. 1, 39, 40 (1825).

⁴² *Minnesota Rate Cases*, 230 U. S. 352, 398 (1912).

⁴³ *Interstate Commerce Commission v. Brimson*, 154 U. S. 447 (1894); *Adams Express Company v. Kentucky*,

214 U. S. 218 (1909); *Kansas City Southern Railway Company v. Kaw Valley District*, 233 U. S. 75 (1914).

⁴⁴ *Dallemagne v. Moisan*, 197 U. S. 169 (1905); *Kentucky v. Dennison*, 24 How. (U. S.) 66 (1861); *In re Rahrer*, *supra*, n. 37 at 545, 560.

⁴⁵ *Second Employer's Liability Cases*, 223 U. S. 1, 55-58 (1912).

⁴⁶ See *United States v. Jones*, 109 U. S. 513 (1883); *St. Louis and Iron Mountain Railway v. Taylor*, 210 U. S. 281 (1908); and *Levin v. United States*, 128 Fed. 826 (1904).

trative officials of the power to determine facts upon the existence of which a federal statute becomes operative has been sustained repeatedly.⁴⁷ It would seem, therefore, that if provision is made for appeal to a federal body, Congress may delegate to the state commissions the power to administer a federal law embracing the essentials of this plan.⁴⁸

In behalf of this method of control it may be said that it would place fact-finding in the hands of officials who would be more familiar with local conditions than a centralized body and who are already conversant with the problems of the electric light and power industry. In view of the local nature of many of these problems and the close connection between local and interstate problems, this advantage of the plan assumes a considerable significance. Moreover, in making use of the existing agencies, the expense of additional regulatory bodies would be avoided in part. Without doubt, the plan also would receive more hearty support from the state commissions than would plans for control by strictly federal bodies. Possibly also it would tend to raise the grade of the personnel of these commissions.

A disadvantage of the scheme is that it would bring about delays and uncertainties arising from the necessity of appeal to a federal agency; its efficiency would depend upon the willingness of the several boards to cooperate. In order to get authoritative settlements, probably many cases would be carried

to the central body. Appeals might occur if any state disagreed or even if all states agreed. Furthermore, it may be questioned whether state officials who owe their allegiance primarily to their states would fit well into a machine for national regulation; they would be acting under two different authorities, independent, and in some respects hostile to each other. At any rate, the adoption of the plan is not necessarily the only way to secure the knowledge and cooperation of state officials, and it is by no means certain that all states would authorize their commissions to act as agents of the Federal Government. Moreover, the scheme, to be successful, would necessitate a widening of the scope of the public utility laws of many states and the improvement of the personnel of the average state commission. The tenure of office of the state commissioners is short, and they are often selected with little regard for the training and experience appropriate to their tasks. There is little doubt but that the plan would fail to bring about the uniformity of regulation which would be possible under direct federal control.

The proposals looking toward federal control by regional commissions or by a central board may be considered together. The plans are well-grounded in constitutional law; the transmission of power across state lines is interstate commerce, and the power of Congress over interstate commerce is supreme and plenary.⁴⁹ Their advantages and disadvantages are fairly obvious. The foremost of the benefits is the promotion of uniformity of regulation which in turn would contribute to financial stability,

⁴⁷ *Buttfield v. Stranahan*, 192 U. S. 470 (1904); *United States v. Grimaud*, 220 U. S. 506 (1911); *First National Bank v. Union Trust Company*, 244 U. S. 416 (1917).

⁴⁸ On this general question see Irwin S. Rosenbaum and D. E. Lilienthal, "Motor Carrier Regulation: Federal, State and Municipal," 26 *Columbia Law Review* 954-987 (1926). It is to be clearly understood that this method would confer upon the states no power to legislate upon interstate commerce; their powers would be limited to fact finding; the opinions of the state

boards would be advisory only; and no presumption of reasonableness would be accorded the findings of these boards. Congress could not confer upon the states the power to legislate on interstate commerce. (See *Cooley v. Board of Wardens*, 12 How. 299 (1851).

⁴⁹ *Supra*, footnote 42.

prevent discriminatory state action, and foster freedom of trade.⁵⁰ Regulation would be as broad as the industry. This advantage would be sacrificed in part were regional commissions created instead of one central body, but regulation could still be kept uniform within a given region and appeal to a central body would provide a means for correlating inter-regional problems. Moreover, federal commissions would probably, although not necessarily, be superior to state commissions in personnel; the tenure of office would be longer, the pay better, and the selection more exacting. Being further removed from local influences, their decisions would probably be less influenced by political considerations.

The outstanding disadvantage of federal control is the unfamiliarity of federal officials with local conditions. This disadvantage, however, would be offset in part by the creation of regional federal commissions; this would enable the carrying on of study at closer range. Furthermore, any successful scheme of regulation must rest upon cooperation between both federal and state officials, and there seems to be no good reason why state commissions should not aid in promoting a proper relationship between federal regulations and local conditions. Federal control would, of course, meet opposition from state officials, because of their fear that their powers will be usurped by federal officials, but it is not likely that this would occur to a greater extent than necessary to insure uniform and non-discriminatory control. It is indeed possible that federal control might keep many utility problems within the jurisdiction of state commissions.

⁵⁰ See George G. Reynolds, *The Distribution of Power to Regulate Interstate Carriers Between The Nation and The States* (New York: Columbia University Press, 1928), Ch. 6.

It has also been urged that federal regulation would mean more red tape and delay in getting decisions, particularly if control were lodged in the hands of the Interstate Commerce Commission.⁵¹ To this there are two answers: First, control need not be given to the Interstate Commerce Commission; instead a new federal commission might be created, perhaps along the lines of Senator Couzen's proposed Communications Commission. A separate commission to regulate only interstate transmission probably would not be justified at present, but there is a crying need for controlling public utility holding companies in general. Second, the alternative of regional commissions would have a further advantage in that many decisions would come from the commissioners themselves rather than from the staff appointees of a centralized commission. However, the necessity of appeal to a centralized body would arise. Moreover, while power developments are largely regional in nature, yet other holding company operations of which interstate transmission is but a part are not regional but national in nature; and inasmuch as it would not be economical at present to create federal commissions to control only interstate transmission, it is doubtful if regional commissions would be as effective as a single federal body.

IV. Conclusion

A sound solution of this problem can be reached only by adopting a plan of regulation which will be legally impeccable, economical, reasonably prompt and flexible, of sufficient scope to reach the abuses complained of, and such as to give due regard to the interests of

⁵¹ See Interstate Commerce Commission, *Annual Report*, 1926, p. 5, for the average length of time required in reaching decisions.

all parties directly concerned. These objectives cannot be reached through methods which are not as broad as the service, which do not place control in the hands of competent officials endowed with powers sufficient to reduce appeals to a minimum, and which aim to single out interstate transmission as an isolated feature of the operation of electric light and power companies. The regulation of wholesale interstate power contracts should be only one phase of a broader control which will include all holding company contracts, security issues, and consolidations.

Federal control is the only method which would meet adequately these requisites; frank recognition of the dual character of the problem is essential. Those phases of the power business which are national in character and which demand uniformity of control should be regulated by the Federal Government; those which are local in nature by the states. Cooperation between the national and local authorities would be imperative in any case. To leave control as it is at present would open the way, because of legal and political difficulties, to unjustifiable abuses; regulation through the method of state compacts would be unwieldy and inflexible; and

the plan to delegate to the state commissions the power to act as agents of the Federal Government would involve delays incident to appeal, fail to promote uniformity, necessitate changes in many state laws, and leave control in the hands of officials less competent than federal commissioners.

The choice between regional federal commissions and a single federal body hinges upon the relative advantages to be derived from the closer touch with local conditions on the part of the regional commissions as compared with the advantage of greater uniformity on the part of the central body. The necessity for appeal from decisions of the regional commissions should be weighed against the delays incident to centralized control. In view of the national character of many of the phases of electric light and power company operations which should be regulated along with interstate transmission, it is suggested that a centralized commission would be most effective. Decisions would be made largely upon the basis of records in any case, and with the assistance of agents and the state commissions local considerations could be given such weight as would be consonant with the need for uniformity.

II. TAXATION OF RAILWAYS IN CANADA: ANALYSIS OF THE BURDEN

By HERBERT E. DOUGALL

A previous article¹ set forth a description of the development and present status of the forms of railway taxation in Canada, the extent of tax exemption, the participation of government in railway operation and ownership, and some discussion of the effectiveness of the various forms of taxation. It was found (1) that there is no uniform basis of rates or assessment in the provincial and municipal tax systems, (2) that the forms of taxation bear little or no relation to earnings, (3) that a central body is needed to distribute the burden more equitably, and (4) that the participation of government in railway operation has complicated the tax problem still further. In the present article a study of the available tax data is presented in order to show concretely the significance of the factors described generally in the first article. The trend of railway taxes as a whole, the effects of non-uniform tax bases, the extent of exemption, the effects of the tax situation on the rate level, and a comparison of Canadian and American railway taxes are described on the basis of the available data.²

¹ "Taxation of Railways in Canada: Development and Present Status," 5 *Journal of Land & Public Utility Economics* 260-274 (August, 1929).

² The data are available for the years 1917 to 1926 and in some cases 1927. Data for earlier years do not lend themselves to accurate analysis, because of the incompleteness of government reports and changes in classification. But this 10-year period is the most important for our purposes because during it the Dominion income tax was first imposed, and the Dominion Government began to participate in the railway business on a large scale. Also, the results of earlier exemptions, and the effects of the static provincial and municipal tax systems became apparent in this period.

³ The method of comparison of taxes to other items has been used effectively by H. D. Simpson in "Taxa-

I. Trend of Railway Taxes as a Whole

Table I shows the relation of taxes paid by all Canadian railways to important income and expense items during the 10-year period, 1917-1926 inclusive, and also the trend of total railway taxes per mile of single track.³ The great increase in total taxes paid in 1920 is attributable to the general increase in the Dominion income tax in that year, but more particularly to the increase in the tax paid by the Canadian Pacific to the Federal Government, for in this year the Company began paying at the regular rate on corporate net income instead of according to the special arrangement which had prevailed during the previous two years.⁴ All roads combined reported a corporate deficit of \$43,359,719 in 1920, while the C. P. R. had a net corporate income of \$33,344,083, which accounts for its large contribution to total taxes paid.⁵

After 1921 the total taxes per mile paid by all lines to all jurisdictions declined gradually until 1926, when the new increase was caused by a higher burden of Dominion taxes and by the payment of taxes by the Canadian National to the Maritime Provinces.⁶

tion of Public Service Industries," 1 *Journal of Land & Public Utility Economics* 44-70 (January, 1925).

⁴ Of the total taxes paid to all jurisdictions during 1920 (\$9,811,432) the C. P. R. contributed \$5,292,822, as compared with \$2,799,879 for the previous year. The C. P. R. system operates 35% of the total mileage in Canada, and although granted important charter exemptions from taxation, has made an increasing contribution to the total railway tax receipts.

⁵ *Statistics of Steam Railways of Canada*, Dominion Bureau of Statistics, 1920, p. 129. The lines now forming the Canadian National System showed a total deficit of \$72,255,945 for the same year.

⁶ See first article, p. 262.

As a percentage of gross receipts,⁷ the tax burden has gradually increased, almost doubling during the 10-year period chiefly as a result of the increase in federal taxation. But the relation to net operating income is much more significant. In 1920, the combined railway income account shows the effect of rising costs without a compensatory increase in income,⁸ total taxes amounting to approximately 70% of net operating revenue, 28% of gross income, and 28% of the total deficit of all lines. As a percentage of net operating revenue, taxes have declined since that year because of a greater proportional increase in revenues. The inflexible provincial tax systems have been mainly responsible for the disproportion between taxes and earnings. In only two provinces are provincial taxes based on earnings, and even there exemptions have robbed this theoretical relationship of most of its significance. As a percentage of total expenses, taxes have shown very little change.

The greater increase in the proportion

of taxes to dividends paid is caused by the increasing tax burden of the C. P. R. which in 1917 paid 97.9% of the total dividends paid by all railways,⁹ and in 1926, 98.3%.¹⁰ The C. N. R., operating over half of the mileage in the Dominion, is in a chronic state of deficit, which accounts for the showing in columns 7 and 8 of Table I.

Railway Taxes Compared to Taxes Paid by Other Types of Corporations. Comparison of the tax burden of railways with that of other corporations is difficult because the tax data for other industries are not obtainable in all cases. No central agency reports figures of income and expense for types of public utilities other than electric railways. Bank earnings and expense accounts are not published, although they are reported to the Dominion Government. Comparative figures are available, however, for electric railways and for insurance companies. Table II shows the relative tax burden of four types of business for the year 1926. The tax burden of steam railways is much lighter

⁷ Gross receipts include operating revenue, non-operating revenue, and revenue from outside operations.

⁸ In September, 1920, the roads were granted a general 40% increase of eastern freight rates and 35% in the case of western freight rates, with an increase of 20% in both east and west passenger fares. These in-

creases remained in effect until December 31, 1920, when certain reductions were made. (*Statistics of Steam Railways, 1920, p. 6.*)

⁹ *Ibid.*, 1917, p. 80.

¹⁰ *Ibid.*, 1926, p. 109.

TABLE I. TOTAL TAXES PAID BY CANADIAN STEAM RAILWAYS, 1917-1926.*

Year†	Amount † (000 Omitted) (2)	Per Mile Single Track‡ (3)	Taxes as Percentage of							
			Gross Receipts (4)	Net Operating Revenue (5)	Gross Income (6)	Net Income Before Taxes (7)	Corporate Net Income (8)	Dividends Paid (9)	Total Expense (10)	Interest on Funded Debt (11)
1917	\$ 4,726	\$ 113.5	1.4	5.4	4.6	8.4	9.1	12.7	1.7	12.9
1918	4,711	104.9	1.3	8.4	6.5	20.4	25.7	12.7	1.4	11.8
1919	5,317	139.4	1.2	16.7	9.1	457.7	435.6	17.6	1.1	9.7
1920	9,605	241.0	1.8	69.3	27.7	d28.5	d22.2	32.1	1.7	16.2
1921	9,421	242.3	1.9	26.6	18.0	d27.2	d21.9	31.2	1.7	12.6
1922	8,932	229.9	1.9	19.1	13.6	d46.1	d31.6	29.6	1.8	11.4
1923	9,301	234.6	1.8	14.4	10.9	d168.8	d62.8	30.6	1.7	11.1
1924	8,685	216.8	1.8	13.7	10.6	d55.4	d35.7	28.5	1.7	9.7
1925	8,984	222.9	1.8	10.8	8.7	126.8	d473.0	29.5	1.8	9.9
1926	10,784	267.2	2.0	10.4	8.9	38.6	62.9	35.4	2.1	11.9

* Computed from *Statistics of Steam Railways of Canada*, Dominion Bureau of Statistics, 1921 and 1926.

† 1917 and 1918 ended June 30; other years ended December 31.

‡ Not including miscellaneous tax accruals and taxes on outside operations.

§ Based on total taxes exclusive of miscellaneous taxes and taxes on outside operation.

d Deficit.

TABLE II. COMPARATIVE TAX BURDENS IN CANADA, 1926.

Types of Companies	Taxes as Percentage of					
	Gross Receipts (1)	Net Operating Revenue (2)	Net Income Before Taxes (3)	Corporate Net Income (4)	Dividends Paid (5)	Total Expenses (6)
Steam Railways*	2.0	10.4	38.6	62.9	35.4	2.1
Electric Railways†	3.2	11.8	17.7	21.5	68.1	3.7
Fire Insurance Companies‡	2.9	5.4	18.1	22.1	307.4	3.4
Life Insurance Companies§	1.2	4.0	5.4	5.3	18.6	1.6

*Statistics of Steam Railways of Canada, 1926, pp. 15, 16.

†Statistics of Electric Railways, Dominion Bureau of Statistics, 1926, pp. 8, 9.

‡Abstract of Statements of Insurance Companies in Canada, Supt. of Insurance, Ottawa, 1927, pp. 84, 86. See also Canada Year Book, 1927-8, p. 893.

§Report of the Superintendent of Insurance of the Dominion of Canada, 1926, Vol. II, pp. lxvi-lxxiii.

than that of electric railways, and has always been so, since the latter have not enjoyed tax exemption. The high ratio of steam railway taxes to net income figures is attributable not so much to high taxes as to low income, and the greater tax burden of electric railways is better indicated in the first, third and fifth columns. The same may be said of the fire insurance companies.¹¹ Apparently, life insurance companies bear a lighter tax burden than any of the other groups, the usual provincial tax being $\frac{1}{2}\%$ on gross premiums. Moreover, the 1% tax on net premiums applied to fire insurance companies under the War Income Tax Act has not been exacted from life insurance companies.

Lacking an adequate basis of comparison, it is difficult to conclude whether or not steam railways are paying more or less than their share of the total taxes paid by corporations in the Dominion. However, were it not for the extent of subsidy and exemption they would be paying a great deal more, and, as we shall see, their burden is proportionately less than $\frac{1}{5}$ that of the steam railways in the United States.

¹¹ The high percentage of taxes to dividends of fire insurance companies is explained by the inclusion in the data of the accounts of British companies writing in Canada which do not report dividends paid as a separate expense.

II. Effect of Non-Uniform Bases of Taxation

Provincial Taxes. In the first article it was pointed out that a uniform system of taxing railways does not exist in the Provinces. An arbitrary lump sum is levied in Prince Edward Island, whereas mileage is the basis in Nova Scotia, New Brunswick, Quebec, and Ontario, gross earnings in Manitoba and Saskatchewan, and a rate on an arbitrary assessed value in Alberta and British Columbia. Nor is there any uniformity in the property tax system in the municipalities of the several provinces. Table III shows the distribution of main track mileage among the provinces and the mileage operated as part of the Canadian lines in the United States, and the taxes paid to the national, provincial (and state), and municipal jurisdictions on a per-mile basis for the year 1926. It will be noticed that the rate per mile of provincial taxes varies widely, being lowest in Alberta, where exemption has been granted to the greatest extent, and where the basis of taxation has no relation either to earnings or mileage. The rate is fairly low in Ontario and Quebec where crown-owned tax-exempt lines are prominent, heavier in Manitoba where some effort has been made to tax the roads on an earnings basis

but where arbitrary taxes have been levied for the most part, and highest in British Columbia, the only Province in which taxes bear any relation to earnings.

Compared to state taxes in the United States, provincial taxation is remarkably light; the rate per mile in the United States is over five times as great as that in British Columbia where the highest Canadian rate per mile prevails.

In the Maritime Provinces the mileage is mostly operated under the Canadian National System, which in 1926 began the payment of taxes to these Provinces after complete exemption since the building of the government lines.

III. Tax Exemption: Its Extent and Effects

Provincial Taxation. The extent of exemption of railway property and earnings in the provinces is indicated in Table IV, which compares the actual amount of taxes paid in each province in 1926 by the C. P. R. and C. N. R. Systems, with the amount these railways would pay on the basis of the provincial railway taxation laws (described in the previous article), if no exemptions were made. In the Maritime Provinces the

C. N. R. has no legal responsibility for taxes, but since 1926 has been paying an arbitrary sum which corresponds fairly closely to the amount which would be paid on the mileage tax basis. In these Provinces the exemptions granted to the C. P. R. are not significant, and the actual taxes paid to the provinces correspond fairly closely to those calculated on the mileage basis.

The Province of Quebec illustrates the effect of special tax exemptions and the presence of government-operated lines, the C. N. R. tax burden being about $\frac{1}{2}$ of what it would be if the law were complied with to the extent of the rate on first and subsidiary track. The C. P. R., of course, has enjoyed special exemption also and its payment is lower than the "legal" payment taking branch and second track into calculation. The same situation, but aggravated by greater mileage, obtains in Ontario.

But in the three "Prairie Provinces" the results of government ownership and of wholesale exemption are most apparent. Although there is no way of determining the gross revenue for an individual province, an approximation of the provincial revenue is arrived at in Table IV by dividing the total gross

TABLE III. DISTRIBUTION OF TAXES PAID BY CANADIAN RAILWAYS, 1926*

Province	Single Track Mileage	Federal and Special Taxes	Provincial and State Taxes		Municipal Taxes		Total Taxes	
			Amount	Per Mile	Amount	Per Mile	Amount	Per Mile
Prince Edward Island	276		\$ 80,000†	\$ 289.8	\$.....	\$.....	\$ 80,000	\$289.8
Nova Scotia	1,426		204,359†	143.3	5,420	3.8	209,779	147.1
New Brunswick	1,935		296,220†	153.1	54,161	28.0	350,381	181.1
Quebec	4,767		111,871	23.5	1,287,758	270.2	1,399,628	293.6
Ontario	10,870		728,116	66.9	1,823,482	167.7	2,551,598	234.7
Manitoba	4,296		571,428	133.0	86,081	20.0	657,509	153.1
Saskatchewan	7,268		349,410	48.1	19,246	2.6	368,656	50.7
Alberta	5,048		36,420	7.2	233,671	46.3	270,091	53.5
British Columbia	4,072		725,007	178.0	700,340	172.0	1,425,347	350.0
Yukon	58		8,715	150.2			8,715	150.25
Total—Canada	40,017	\$3,040,609	\$3,111,547	\$ 77.8	\$4,210,159	\$105.2	\$7,321,704	\$182.9
United States‡	336		\$329,329	\$980.2	\$92,146	\$274.2	\$421,475	\$1254.4
Total	40,353	\$3,040,609	\$3,440,876	\$85.3	\$4,302,305	\$106.6	\$7,743,181	\$192.7

*Computed from *Statistics of Steam Railways of Canada*, 1926, pp. 9, 172-175.

†For 1925 and 1926 combined.

‡Short lines in the United States belonging to the original Canadian Railways. Does not include the mileage of American lines now owned by Canadian corporations. Tax figures represent state and municipal taxes paid in the United States.

TABLE IV. COMPARISON OF LEGAL AND ACTUAL PROVINCIAL TAXES, 1926.

Provinces	Canadian Pacific Railway		Canadian National Railway	
	Taxes at Legal Rate	Actual Taxes	Taxes at Legal Rate	Actual Taxes*
Prince Edward Island.....	\$.....	\$.....	\$.....	\$ 40,000
Nova Scotia.....		350	70,790†	91,000
New Brunswick.....	53,500†	53,520	123,345†	119,000
Quebec.....	34,263†	33,407	73,943†	27,500
Ontario.....	278,843†	281,871	508,900†	371,974
Manitoba.....	503,362‡	384,500	511,314‡	175,000
Saskatchewan.....	1,462,179‡	135,010	1,247,475‡	214,400
Alberta.....	416,220	155,248	420,254	cr. 119,328
British Columbia.....	274,540	266,379	278,220	289,061

*Statistics of Steam Railways of Canada, 1926, pp. 172-173.

†Based on legal rate on miles of main track only and consequently underestimated.

‡The law requires a tax of 2% of gross earnings arising in each of these provinces. It is difficult to apportion the railways' total gross among the provinces as a basis for provincial taxation. Perhaps this is one reason why the provision has not been complied with. But for comparative purposes a rough approximation of the total gross applicable to each of these two provinces has been figured on the basis of mileage. The "legal rate" figure is thus

$$\frac{\text{Single track mileage in Saskatchewan (or Manitoba)}}{\text{Total single track mileage}} \times 2\% \text{ of total gross.}$$

receipts for the Dominion by that percentage of the total mileage which lies within the Province, and taking the legal percentage of this amount. In Manitoba the C. P. R. paid \$385,000 by special arrangement in 1926, which is almost $\frac{1}{3}$ less than the legal 2% rate on the gross earnings for the Province arrived at in the above-mentioned manner. In the same province the C. N. R. paid \$175,000 by special arrangement, compared with the amount of \$511,314 due on the gross earnings basis. In Saskatchewan the C. P. R. paid only \$135,009 as compared with \$1,462,179 due as 2% of gross earnings, while the C. N. R. paid only \$214,400 as compared with \$1,247,475 on the same gross earnings basis. Similar large exemptions were found also in Alberta.¹²

In British Columbia only do the actual taxes paid by both Systems bear any close approximation to what they would be on the legal basis (2% on a valuation of \$10,000 per mile.)

Municipal Taxation. In municipal taxation a still greater lack of uniformity

is seen (Table III). In the Maritime Provinces the lines are chiefly crown-owned and therefore exempt. In Manitoba and Saskatchewan only improvements are taxed, and this concession to single-tax practice, coupled with exemption, accounts for the low municipal per-mile tax burden. In Alberta the maximum assessment of railroads is fixed by law at \$1,000 per mile of right-of-way, which largely accounts for the low municipal tax burden there.¹³ It is interesting to note that the municipal tax burden is greatest in Quebec, where railway property has received no special consideration.

That taxation of railways should bear a close relation to earnings was recognized in Canada as far back as 1905, with the report of the Ontario Commission on Railway Taxation, which was discussed in the previous article. Yet at the present time, as the preceding analysis shows, taxes and earnings are neither closely nor uniformly related by either provincial or municipal methods, and exemptions have further increased the extent of non-uniformity.

¹² In 1926 the taxes of the C. N. R. are actually shown as a *credit* in the accounts. Correspondence with the Tax Commissioner of the C. N. R. failed to explain this unusual situation.

¹³ The average cost of railroad construction in the United States of America and Canada is roughly \$60,000 per mile.

TABLE V. COMPARATIVE TAX BURDEN, CANADIAN RAILWAYS, 1926.*

Road	Taxes as Percentage of Gross Operating Earnings		Taxes per Mile Single Track		Single Track Mileage 1926
	Total Taxes	Provincial Taxes	Total Taxes	Provincial Taxes	
Esquimalt & Nanaimo Rwy. Co.....	4.9	2.4	\$ 365.7	\$ 181.1	209.7
Kettle Valley Rwy. Co.....	4.0	3.5	205.7	181.4	366.2
Toronto, Hamilton & Buffalo Rwy. Co.	3.9	.05	1,193.0	15.8	99.9
Canada Southern Rwy. Co.....	3.1	.2	1,960.0	124.0	379.6
Canadian Pacific Rwy. Co.....	2.9	.8	412.8	114.0	13,862.0
Algoma Cent. & Hudson Bay Rwy. Co.	1.9	1.1	108.2	64.9	332.4
Montreal & Atlantic Rwy. Co.....	1.9	1.5	186.1	147.0	184.6
Pere Marquette Rwy. Co.....	1.7	.03	486.7	9.4	199.0
Quebec Central Rwy. Co.....	1.6	.4	158.7	36.9	330.9
Canadian National Rwy. Co.....	1.5	.7	167.8	72.7	20,708.1
Dominion Atlantic Rwy. Co.....	1.1	1.0	66.1	58.9	288.4
Sydney & Louisburg Rwy. Co.....	.3	.2	56.0	34.3	78.2
St. Lawrence & Adirondack Rwy. Co....	.2	.1	61.2	34.5	46.1

*Compiled from *Statistics of Steam Railways of Canada, 1926.*

Inequality of the Tax Burden of Different Roads. Not only is there inequality in the tax burden of the different provinces and in the municipalities, because of differing provincial and municipal systems and because of varying degrees of exemption, but the burden of the various roads is decidedly unequal. In Table V the 13 "Class I" railways of Canada¹⁴ are ranked in order of the percentage of total taxes to gross operating earnings. The roads show no correspondence in ranking with respect to provincial taxes as a percentage of gross operating revenue, giving further evidence of the non-uniform provincial tax systems and the lack of relation to earnings; and a similar lack of correspondence appears in the column headed "Provincial Taxes Per Mile." One would expect total taxes to vary considerably according to earnings because of the Dominion tax on net income, but, assuming that taxes based on earnings are

most desirable, there can be no justification for the wide variation in provincial taxes. With the exception of the C. P. R. and the C. N. R., all the roads are intra-provincial¹⁵ and the two roads with the highest taxes as a percentage of gross earnings operate in British Columbia, where, as we have seen, provincial taxes are the highest and municipal taxes the second highest.

Effect of Government Ownership. The effect of the participation by the Dominion Government in the construction and operation of railway mileage on the taxes paid by the Canadian National lines, which constitute over $\frac{1}{2}$ of the total mileage in Canada, is shown in Table VI. Here the burden of the C. N. R. is compared with that of the other large transcontinental system, the C. P. R., which, as we have seen, has also been granted extensive tax exemption. In 1917, the lines now operated by the Government,¹⁶ comprising 52% of the

¹⁴ With the exception of the Temiskaming and North Ontario, owned and operated by the Ontario Government and paying no taxes, and the Wabash lines in Canada.

¹⁵ The Montreal and Atlantic operates in Quebec and in the State of Vermont.

¹⁶ In 1917 the lines now forming the C. N. R. System were being operated partly as government lines and partly as private corporations, the acquisition of the Canadian Northern and Grand Trunk System not having been formally completed until 1917 and 1920 respectively.

total single track mileage in the country, paid 48.8% of the total railway tax bill. In 1926 the same System paid only 32.6% of the tax bill. Yet in the meantime its percentage of the total gross receipts of all railways had increased from 38.8% to 45.2%. The improvement in the earn-

TABLE VI. COMPARISON OF THE TAX BURDENS OF THE CANADIAN PACIFIC RAILWAY AND THE CANADIAN NATIONAL RAILWAY, 1917-1928.*

Year	Gross Receipts as Percentage of Total for All Roads		Taxes as Percentage of Total Taxes for All Roads†		Single Track Mileage as Percentage of Total Mileage for All Roads	
	C.P.R.	C.N.R.	C.P.R.	C.N.R.	C.P.R.	C.N.R.
1917	48.3	38.8	39.8	48.8	33.6	52.0
1919	43.9	42.7	48.8	34.3	34.5	51.9
1921	43.4	44.9	36.7	32.9	34.1	53.0
1923	42.4	44.6	38.6	30.2	34.2	51.9
1925	41.8	45.4	31.4	35.2	34.1	51.7
1926	41.6	45.2	33.3	32.6	34.4	51.3

*Compiled from *Statistics of Steam Railways of Canada, 1917-1926*. C. N. R. figures include all lines now operated by the Dominion Government, but some of which in 1917 and 1919 still had separate accounts.

†Including miscellaneous taxes and taxes on outside operations.

ings of the C. N. R. System has not been followed by a corresponding increase in taxes, because only Dominion taxes are based on income and the C. N. R. System, having been operated at a deficit since its inception, has had a negligible burden of federal taxes. Those portions of the present C. N. R. System which were originally built by the Crown have never paid taxes of any kind¹⁷ and the sections originally built by private corporations, but subsequently taken over by the government because of its large investment in them and its guarantee of their securities, were, as we have seen, given many exemptions from taxation.

It seems an anomalous situation that the C. P. R., a privately owned and operated system, competing directly with the C. N. R., should bear an increasing share of the railway tax burden, while the annual deficits of its public rival are provided for out of the Dominion treasury to which the C. P. R. is the largest single contributor.

¹⁷ Excepting to the Maritime Provinces since 1926.

IV. Taxation and Railway Rates

Comparison of Rates in Canada and the United States. A statement to the effect that the tax burden borne by railways directly affects the rate structure may seem unnecessary, but the fact becomes very significant when a comparison is made between rates in Canada and the United States and between the tax bill of the American and Canadian roads which are competing for trans-continental traffic. Officials of American systems are continually complaining that they are unable to compete with the Canadian rate level, and one reason given is the relatively light tax burden which the Canadian roads enjoy, which allows them to make much lower rates. They also compare the taxes on railways in the two countries in their efforts to demonstrate that the American roads are bearing an increasing and disproportionate tax burden. The truth of these contentions may be examined best through a study of actual rate and tax data for the two countries. Inspection of Table VII shows that the tax burden of all Canadian roads is much lighter than that of all American roads. This is particularly evident in column 2 comparing the total taxes per mile of single track. That taxes in this country have been greater than those in Canada for some time is evidenced by the fact that there has been little change in the relative burden since 1917. Taxes per mile have doubled in both countries during the 10-year period, but taxes as a percentage of income and expense figures have increased to a much greater degree in Canada than in the United States during this time.

On an income and expense basis the difference between the tax burden in the two countries is not as great because of the greater density of traffic on the American roads. But the latter bear

TABLE VII. COMPARISON OF TAXES ON RAILWAYS IN UNITED STATES AND CANADA*

Lines	Yr.	Total Taxes† as Percentage of								Interest on Funded Debt
		Total Taxes Per Mile of Single Track†	Gross Receipts	Net Operating Revenue	Gross Income	Net Income Before Taxes	Corporate Net Income	Dividends Paid	Total Expense	
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)
Canada.....	1917	\$ 113.5	1.4	5.4	4.6	8.4	9.1	12.7	1.7	12.9
	1926	280.3	2.1	10.9	9.4	40.5	65.9	38.1	2.2	12.5
United States.....	1917	940.1	5.0	18.5	14.6	27.0	36.9	68.3	5.8	54.3
	1926	1661.3	5.8	22.9	18.6	32.7	48.7	97.2	6.6	79.3

*Canadian data compiled from *Statistics of Steam Railways of Canada, 1921 and 1926*. United States data from *Statistics of Railways in United States of America, Interstate Commerce Commission, 1917, pp. 13, 34, 35; 1926, pp. 1-11, xxiv*.

†Including taxes on outside operations and miscellaneous taxes.

twice the burden relative to gross receipts, net operating revenue, and gross income, and approximately three times the burden relative to dividends paid and total expenses. According to column 8, in the United States the municipal, state, and federal governments participate in railway earnings to about the same extent as do the owners. The lighter burden of the Canadian roads relative to interest on debt is caused by the enormous capitalization and heavy fixed charges of the Canadian National lines.

Table VIII shows the tax burden for the year 1926 of particular lines in the United States, chosen as representative of different sections of the country, and

of the C. N. R. and C. P. R. lines in the United States, as well as of the C. N. R. and C. P. R. systems in Canada.¹⁸ The American roads are ranked in order of taxes per mile, and while there is a great spread in this index, largely the result of the greater federal taxes paid by the roads having higher earnings, taxes correspond much more closely to gross

¹⁸ The American systems were chosen on a geographical basis, eastern, trunk line, central, southern, granger, middle-western and southwestern districts being represented. In this way the roads are representative of different operating conditions, kinds and density of traffic, and taxing areas. Roads other than those selected might have been chosen but in the case of the New York Central, New Haven, Great Northern and Northern Pacific, the element of direct competition with the Canadian transcontinental lines made their selection particularly fitting.

TABLE VIII. TAXES PAID BY REPRESENTATIVE UNITED STATES AND CANADIAN RAILROADS, 1926*

Road	Total Taxes Per Average Mile Operated	Total Taxes as Percentage of		
		Gross Receipts	Net Income Before Taxes	Corporate Net Income
New York Central System.....	\$ 3,486.3	6.05	30.18	43.23
New Haven System.....	2,278.5	4.15	39.14	64.29
Illinois Central System.....	1,666.3	6.12	40.30	68.37
Union Pacific System.....	1,634.5	6.80	26.38	35.84
Southern Pacific System.....	1,628.4	6.43	39.10	59.76
Southern Railway System.....	1,588.8	6.31	29.58	41.90
Northern Pacific System.....	1,374.8	7.99	30.43	43.74
Great Northern System.....	1,195.7	7.36	27.39	37.70
Missouri Pacific System.....	759.1	4.08	35.63	55.36
Canadian National Ry. Lines in United States.....	1,250.0	3.47	109.06	def.
Canadian Pacific Ry. Lines in United States.....	626.8	5.91	103.44	def.
Canadian National Ry. Lines in Canada.....	167.8	1.60	def.	def.
Canadian Pacific Ry. Lines in Canada.....	412.8	2.70	12.6	14.7

*Computed from data in *Statistics of Steam Railways of Canada, 1926*, and *Statistics of Railways in the United States of America (I. C. C.) 1926*.

receipts in the case of the American roads than was found to obtain for Canadian roads (Table V). The lines in the United States controlled by Canadian railways all show a net deficit for this year, and their taxes are correspondingly lighter. The remarkable difference between the tax burden of the larger United States systems and that of the larger Canadian systems is a great source of grievance to the former.

Not only are the Canadian lines comparatively free from taxes, but the C. N. R. System has its annual deficit made up by the Dominion Government. This amounts to a direct subsidy which makes negligible the taxes this System does pay. Table IX shows that the aver-

TABLE IX. DEFICITS, CANADIAN NATIONAL RAILWAYS, CANADIAN AND UNITED STATES LINES, 1922-1927.

Year	Average Miles Operated*	Net Corporate Deficit†	Net Corporate Loss Per Mile
1922	21,761.1	\$57,960,097	\$2,663.5
1923	21,805.1	51,697,675	2,370.9
1924	21,865.99	54,860,419	2,508.9
1925	21,926.95	41,444,764	1,890.1
1926	22,055.98	29,701,445	1,346.7
1927	21,891.6	34,373,027	1,570.1
Average for Six Years	21,884.5	45,006,239	2,056.5

*1922-1926, *Poor's Manual of Railroads*, 1927, p. 1373. 1927 mileage is as of December 31 (*Poor's Manual*, 1928, pp. 1561 and 1541).

†*Canada Year Book*, 1927-28, p. 665. The 1927 deficit is taken from *Preliminary Report*, Canada Bureau of Statistics, November 7, 1928, p. 4.

age deficit per mile of line for the period 1922-1927, made up by the Dominion Government, amounted to \$2,056.50 per mile. In 1926 the total deficit of \$29,701,445 was nearly three times the total tax bill for all roads in the country, (\$11,309,706, including taxes on outside operations and miscellaneous taxes) and over eight times the tax bill of the Canadian National System (\$3,684,053). Again, the deficit of the C. N. R. made up by the Dominion Government, was, in the year 1926, virtually 10 times the total taxes received by it from all roads in Canada.

The American lines in competition with Canadian lines, particularly for the grain traffic of the west, claim that they cannot hope to meet the Canadian rates because of the low tax burden of the Canadian systems. On December 5, 1928, the Interstate Commerce Commission reported in response to Senate Resolution No. 250 (May 25, 1928) on the "Propriety of rates similar to the Canadian rates on grain, livestock, and other agricultural products in the north west," and showed, in reaching its conclusion, "that a reduction in the rates in the north west to the Canadian basis . . . is not warranted,"¹⁹ because "conditions in Canada, where taxes are remitted or reduced to a minimum and deficiencies in operating revenues of the Canadian National are made up or borne by the government, and conditions in the United States, where these concessions to the carriers are not made, are not comparable."²⁰ In the course of the investigation the carriers made representations which are summarized as follows:

1. In 1926 the taxes of all railroads, in the United States, if reduced to the average Canadian basis would have been reduced in the grand total of \$330,000,000 and under the Canadian policy of subsidy and taxes the Class I railroads in the United States, during the period from 1923 to 1927, could have handled free all grain, flour, meal and

¹⁹ *Ex Parte* 95 Report of the Commission, p. 22. The resolution read as follows: "Resolved, that the Interstate Commerce Commission is requested (1) to make an investigation with a view of ascertaining whether rates similar to the Canadian rates on grain, livestock, and other agricultural products in the northwest would be compensatory to American railroads operating in that territory, and (2) if upon such investigation the rates similar to the Canadian rates are found to be compensatory, that the Commission reduce said rates in the northwest on said agricultural products so that the American farmer will be put on an equality with the Canadian farmer in this respect."

²⁰ *Ibid.*, p. 21-22.

livestock and had left \$403,332,826 more revenue than they actually received.²¹

2. During the period 1921-1925 the average tax rate per mile was \$1065.14 in the western district and \$227.98 in Canada, and the average deficit of the Canadian National was \$2596 per mile. The roads in the western district, if given the Canadian National subsidy and the Canadian tax rate per mile, would have received, in 1924, \$11,293,314 more revenue than they did receive for transporting all products of agriculture and animal products, and could, from the difference in taxes alone, have reduced more than 20% the rates on such traffic.²²

3. As for a single line, in 1924 and 1925 the Great Northern paid more taxes on its approximately 8,250 miles of railroad than did all of the Canadian railroads on their approximately 40,000 miles. In 1924 the Great Northern, at the Canadian tax rate per mile, could have reduced its wheat rates 67%, or its grain rates 47%, or its rates on all revenue freight 9%, and maintained existing revenues.²³

These representations were not made by the American carriers to indicate a desire to lower rates but to combat the fact that Canadian shippers have a great advantage over American shippers as a result of the lower rate level in Canada, particularly on export grain, and to answer the appeal of American shippers for corresponding rates.

A comparison of American and Canadian grain rates reveals a substantially lower rate level in Canada applicable to export trade, taking mileage into consideration, than the rate level established

by the carriers under the supervision of the Interstate Commerce Commission. In the reply to Senate Resolution No. 250 the Commission reports that "for distances over 400 miles the Canadian rates become increasingly lower than the rates in any of the cost-analysis scales."²⁴ For instance, for 500 miles the rate to Fort William is 16 cents, whereas the cost for 500 miles under the Interstate Commerce Commission analysis of transportation of wheat in the United States is placed at 18.1 cents.²⁵ Also, for 750 miles, which approximates the average haul of export wheat in Canada, the Canadian rate is 20 cents to Fort William and 22 cents to Vancouver, whereas the Interstate Commerce Commission analysis of cost for the United States lines would be 24.85 cents.²⁶ The Canadian basis is much lower than the scale of rates prescribed by the Commission for application from South Dakota to points in Iowa,²⁷ and is lower than the domestic rates from Montana to Minneapolis and Seattle, which the Commission found, as late as 1926, to be not unreasonable.²⁸

In 1924 the United States Tariff Commission commented on the Canadian rates to Lake Superior ports as follows:

"The advantage to the Canadian producer in the rail rate is 5.33 cents per bushel. So far as this relates to the Canadian National Railways it is in the nature of an advantage

roads it could reduce every rate on every commodity on its system 9 per cent and preserve its present net income, and that 'it would be glad to carry from the Northern end of its North Dakota branches the same rates that are carried on the Canadian lines if it had the subsidies and consideration from this government that the Canadian lines have from their government.' " (p. 252).

²⁴ *Ibid.*, p. 9. Cost-analysis scales are theoretical rate-scales made for hauls in the United States on the basis of cost-of-service plus 6% on investment.

²⁵ *Idem.*

²⁶ *Ibid.*, p. 10.

²⁷ 473 I. C. C. 357, July 25, 1922.

²⁸ 107 I. C. C. 276, January 12, 1926.

²¹ *Ibid.*, p. 16-17. In *Ex parte* 92, "Rates on Grain in the United States and Canada," the Report of the Commission in compliance with Senate Resolution 208, dated May 1, 1928, the Commission reviewed the comparative grain rate levels in United States and Canada and indicated the importance of the higher taxes on roads in the United States. As of 1926, the Commission said "If the tax accruals in the United States were on the same basis per mile of road as in Canada, they would be approximately \$330,000,000 less." (p. 8).

²² *Ibid.*, p. 16.

²³ *Ibid.*, p. 15. In the evidence in "Grain and Grain Products" (122 I. C. C. 235) issued February 8, 1927, the Great Northern stated that "if its taxes were reduced to the amount per mile paid by the Canadian

granted a foreign producer by a foreign government. The testimony and investigation show that in western Canada wheat is hauled on all railroads to the head of the lakes at rates 3 cents per bushel less than in 1897, despite increases in operating costs during the past generation. It is an unavoidable inference that wheat is being hauled at less than cost and that the Canadian Government, so far as National Railways are affected, is bearing the loss."²⁹

Other Governmental Policies Affecting Rates. The lower level of rates on grain and other products cannot, however, be attributed entirely to the lower tax burden of the Canadian railroads. The Canadian rate level has to a certain extent been "legislated" rather than having grown out of the movement of traffic and the competition of carriers and markets. The "Crow's Nest Pass Agreement" made in 1898 to apply to all points on C. P. R. lines then laid down, reducing grain rates, and extended in 1927 to additional C. P. R. points and to points on the C. N. R. lines also, is still in effect and has been largely responsible for holding down Canadian rates. This agreement is evidence of the close association of government with railway building and operation, as the low rates resulting from it were originally agreed to in consideration of cash subsidies and land grants to the C. P. R.

A recent example of government aid to railways and of unnatural rate-making is offered by the special arrangement made in 1927 to allow free movement of traffic in and west bound from the Maritime Provinces. The portion of the C. N. R. System lying east of Levis and Diamond Junction in Quebec, and in New Brunswick, Nova Scotia, and Prince Edward Island were designated as the "Eastern Lines," and their ac-

counts were to be kept separate from those of the remainder of the C. N. R. System. By the Maritime Freight Rates Act,³⁰ effective July 1, 1927, the existing tariffs over this section were reduced 20%, and the deficit included in a separate item in the estimates submitted to Parliament. The reason for this action is stated in the Act, i. e., that this portion of the C. N. R. lines (formerly called the Intercolonial Railway) was designated for defense as well as for commerce and that "the strategic considerations determined a longer route than was actually necessary, and, therefore, that to the extent that commercial considerations were subordinated to national, imperial and strategic conditions the cost of the railway should be borne by the Dominion and not by the traffic which might pass over the lines."³¹ Accordingly, the rates specified were "statutory rates, not based on any principle of fair return to the railway for services rendered in the carriage of traffic."

Other railways operating in this eastern territory were allowed to reduce their rates by the same percentage and were authorized to bill the Board of Railway Commissioners for the difference between the normal and the reduced tolls. These differences are in effect bonuses to the shippers in the Maritime Provinces and eastern Quebec. The loss in freight revenue to the Eastern Lines during the six months, July to December, 1927, resulting from these reductions in rates ordered by the Act, amounted to \$931,810. The deficit of \$3,264,695 therefore contains the bonus of this amount.³² The private railways operating in the eastern territory billed the

²⁹ "Wheat and Wheat Products," *Report of the United States Tariff Commission*, March 4, 1924, p. 43.

³⁰ 17 Geo. V., C. 44.

³¹ *Ibid.*

³² "Canadian National Railways: Revenues, Expenses, etc., 1923-1927", *Dominion Bureau of Statistics*, November 7, 1928, p. 2.

Board for such losses and included them in their revenues.

Besides tax relief and such special rate adjustments, Canadian railways have enjoyed direct governmental aid from the very beginning of the railway period to the present time. To December 31, 1926, 47,184,189 acres have been given to the roads by the Dominion and provincial governments, as indicated in Table X. This acreage is, of course,

TABLE X. LAND GRANTS TO CANADIAN RAILWAYS TO December 31, 1926.*

Political Unit	Acres	Acres
By Dominion Government:		
To privately owned lines . . .	26,044,622	
To lines now operated under the C.N.R. System	5,630,848	31,675,470
By Provincial Governments:		
Nova Scotia	160,000	
New Brunswick	1,788,392	
Quebec	2,085,710	
Ontario	3,241,207	
British Columbia	8,233,410	15,508,719
Total		47,184,189

*Exclusive of crown lands used by lines built by the Dominion Government.
Compiled from *Statistics of Steam Railways of Canada*, 1926, p. 12.

exclusive of crown lands used by the railways originally built by the Dominion Government.

Another method of aid to railways by Dominion, provincial, and municipal governments is shown in Table XI, which summarizes the financial aid received by the Canadian roads to December 31, 1926. The total amount (\$225,467,753) does not include the accruing deficits of the Canadian National lines but represents the amounts actually paid to private roads.

Table XII indicates the other chief method of public aid to railways, namely, guarantee of railway securities. To December 31, 1926 Dominion and provincial governments had guaranteed \$484,537,000 of railroad securities.

Because of its support in all these ways, the Dominion Government had to take over lines to make good its

guarantee obligations (the Canadian Northern in 1917 and the Grand Trunk in 1920), when the railways were no longer able to meet their fixed charges. These lines were combined with the existing government lines (also operating at a deficit) and the resulting Canadian National System, while showing a remarkable improvement in operating efficiency, is saddled with the enormous debt of \$2,239,478,478 for a mileage of 20,708.1 in 1927, or over \$108,000 per mile.³³

Summary

On the basis of the facts presented in the two articles, the following conclusions or comments seem to the writer to be warranted:

1. There is need for a revision of the methods of taxing railway corporations toward the application of taxes based on earnings in the several provinces. Such a revision was suggested as far back as 1905 by the Ontario Commission on Railway Taxation, but to date little progress has been made in this direction. The problem is, of course, to find some way of apportionment, among the provinces, of taxes based on earnings, as most of the mileage is operated by two interprovincial systems. Here is evidence of the need of a central tax body whose function it would be to work out a method of apportionment. For the Dominion, the Board of Railway Commissioners might well be used, and for each province a tax commission should be set up similar in nature and duties to the better state commissions in the United States, so that inequalities in assessment and rating among the municipalities of a single province may be ironed out.

One method of apportionment among the provinces might be on the basis of

³³ *Ibid.*, p. 6.

TABLE XI. FINANCIAL AID TO CANADIAN RAILWAYS TO December 31, 1926.*
(000 Omitted)

Government Giving Aid	Cash Subsidies	Loans	Subscription to Shares	Value of Lines Given to Canadian Pacific Railway	Miscellaneous	Total
Dominion	\$ 118,601	\$ 15,143	.....	\$ 37,790	\$ 5,160	\$176,694
Provincial	33,061	.....	\$ 300	.....	.....	33,361
Municipal	12,988	.....	2,426	.....	.....	15,414
Total	\$ 164,650	\$ 15,143	\$ 2,726	\$ 37,790	\$ 5,160	\$225,468

*Canada Year Book, 1927-1928, p. 658.

mileage but clearly mileage and earnings are not necessarily closely related. Possibly the Dominion Government might increase its rate on net income and apportion part of the receipts to the several provinces on the basis of the earnings within each province.³⁴ How these provincial earnings are to be determined is the difficulty. Volume of traffic originating in each province, as indicated by ton-miles or traffic density, is not a fair basis, for one ton-mile is not the same as another. This problem is similar to the ordinary railway problem of allocating costs and revenues, and must be left unanswered for the present.

2. As long as over $\frac{1}{2}$ of the country's mileage is being operated at a deficit, and that deficit in turn is made up by the Dominion Government, a net earnings tax would be ineffective, and a gross earnings tax would simply be

passed on to the general public. The tremendous burden of fixed charges, which the C. N. R. will probably never be able to meet, was piled up by the overcapitalization of the private roads which the government took over and by the building of government lines, such as the Intercolonial, far in advance of adequate traffic. Sooner or later the Canadian National Railways will have to be recapitalized, the securities held by the government cancelled, and the system's finances placed on a par with those of its successful rival, the C. P. R. Until this is done the C. N. R. cannot be expected to contribute to the tax bill on

³⁴ As pointed out in the first article, the provincial governments have the sole right of levying taxes for provincial purposes. However, the apportionment of taxes on interprovincial carriers might be included under the Dominion subsidy which includes "a specific sum annually towards the expenses of the Provincial Government." (British North America Act, 30 and 31 Vict., C. 3, Sec. 102-119.)

TABLE XII. GUARANTEED RAILWAY BONDS—Outstanding as of December 31, 1926.*

(000 Omitted)

Government Guaranteeing	Bonds of Railways Now Operated Under Canadian National System	Bonds of Railways Operated by Provinces	Bonds of Railways Operated by Canadian Pacific Railway	Total
Dominion	\$ 345,666	.....	.....	\$ 345,666
Provincial	100,686	\$ 37,254	\$ 931,000	138,871
Total	\$ 446,352	\$ 37,254	\$ 931,000	\$ 484,537

*Compiled from *Statistics of Steam Railways of Canada*, 1926, p. 13.

a relatively even basis with the C. P. R.³⁵

It might be claimed that the payment of taxes by the C. N. R. to the Dominion Government is taking money out of one pocket and putting it in another. This is quite true, but no adequate basis for rate-making, judgment of efficiency, accounting control, and public policy can be worked out until the rival systems are on a comparable basis as to both revenues and expenses. A net earnings figure under any other conditions is well-nigh meaningless.

3. One difficulty in effecting a revision of the tax basis toward greater equity and uniformity is the presence of charter exemption from taxation, granted by local, provincial and national governments alike to the C. P. R. and to the former private companies which are now operated by the government. But we have seen that both the C. P. R. and the C. N. R. have made payments, by special arrangement, to provinces in which, according to the letter of the law, no payments were necessary. The C. P. R., in spite of the exemption originally granted in its national charter, is paying an increasing tax bill from year to year. Some arrangement, similar to that begun in 1926 by the C. N. R. in the Maritime Provinces, can be made by both the C. P. R. and C. N. R. in the central and western provinces toward bearing a reasonable share of the public expenses, but it is not likely

that any such steps will be taken by either system until the C. N. R. is recapitalized.

4. At present it is apparent that the Canadian taxpayer is meeting the share of public expense which in the United States is being paid by the railways. In other words, the greater the extent of exemption, subsidy and inequality, the greater the proportional share of public expense which other corporations and individuals must contribute. Certainly, in the last analysis, the users of railway service should contribute, through rates, the taxes which the railways ought to pay. Every taxpaying individual, for instance, including the C. P. R., is helping to maintain the C. N. R. This is a violation of sound public and private finance, and only serves to perpetuate the public support of an industry in a country whose growth has been characterized, in almost every other line of business, by private initiative and a minimum of both aid and restriction by government.

5. The history of railways in Canada is a record of the participation of government in the railway business—building, financing, subsidizing, operation, tax exemption, rate concession. In this respect Canada is still going through the phase of railway development which, for American roads, ended about 1890. At the feet of the Dominion Government may be laid the main responsibility for the building of three trans-continental systems where traffic still justifies but two. But the lines are there, traffic will ultimately support them, and in the meantime the people of Canada must shoulder the burden. As traffic density increases, public support should be gradually diminished, until the best type of public ownership—private ownership plus adequate public regulation—alone prevails.

³⁵ Honorable Charles Dunning, Minister of Railways and Canals, and Sir Henry Thornton, Chairman and President of the Canadian National Railways, have expressed the opinion that the Government is convinced that a recasting of the financial structure is necessary, and that the next session will see a plan of reconstruction laid before Parliament. There has been some opposition to recapitalization by the junior stockholders of the former Grand Trunk Railway Company whose shares were declared of no value by the Board of Arbitration in 1919, when the Government bought that system. (See *Monetary Times*, Montreal, May 3, 1929, p. 4, and *Toronto Daily Globe*, April 26, 1929.)

THE BACKGROUND OF LABOR RELATIONS OF PUBLIC UTILITIES*

By E. W. MOREHOUSE

II. Business or Market Factors

No hard and fast line divides the business or market influences on utility labor relations from the technological factors heretofore mentioned. In many cases the technical requirements of service dictate a particular market situation which in turn has its effect upon labor relations. The close affiliation of these two groups of factors is seen in the above mentioned contacts between primary producers and consumers. The fact that utility products and services are usually used directly²⁴ on the customer's premises or on public property is a technological feature that also has marketing significance. The development of new outlets for service through employee contacts with customers is a pertinent illustration.

Three outstanding characteristics of utility markets deserve mention as affecting labor relations: (1) the monopolization of markets; (2) the localiza-

tion of markets; (3) competition in the labor market in relation to monopoly and localization.

The effects on labor relations of the monopolistic organization of utility markets are four fold: (1) Workers are assured of a relatively permanent demand for their services;²⁵ (2) There is reasonable assurance that the flow of the revenues out of which wages are paid will continue,²⁶ i. e., that the source of wages will not dry up; (3) An offsetting factor is that monopolization of the market curtails the opportunities to obtain similar employment in some occupations;²⁷ (4) The monopolistic position and power of local utilities is felt to be a source of strength to the companies and a handicap to labor in negotiating wages and other terms of employment. Professor Berman implies this attitude when he states in a recent review: "The author [of the book reviewed] asserts that, since continuance of service may be legally demanded of public utilities, there is no ground for distinguishing between the legal position of the employees of such concerns and their employers. In the opinion of the reviewer there is such ground for distinction. Public utilities have a monopoly; their employees do not. Furthermore, in the long run, the utilities are assured an adequate return by the commissions which set rates. Public utility employees are generally assured neither an ade-

*For the first instalment of this article see 5 *Journal of Land & Public Utility Economics* 275-284 (August, 1929).

²⁴ We have not yet developed commercially the transmission of electric power by wireless, though the transmission of news and pictures by radio has developed tremendously in recent years.

²⁵ This statement does not apply, of course, to particular individual workers nor does it mean that tenure of jobs will be secure and continuous. As a matter of fact, records of the Interstate Commerce Commission show that the index of employment on Class I railroads declined in four of the past five years. The indexes follow:

Year	Index
1923	100.0
1924	94.5
1925	94.1
1926	96.1
1927	93.7
1928	89.1*

* Average for 8 months.

²⁶ The size of the revenue stream and the proportion obtainable for wages are different matters.

²⁷ This refers to local opportunities for similar employment and applies especially to home-owning workers with families who therefore may be reluctant to move to another community.

quate wage nor continued employment."²⁸

On the other hand, it is sometimes said that trade unions, if strongly organized, prefer dealing with a monopolistic organization because dealing with a single large employer facilitates enforcement of uniform standards over a wide territory. However, the experience of the railroad unions with national agreements during the period of federal control does not altogether bear out this position. Uniform standards over a wide area tend to benefit employees in smaller communities by reducing standards for those in larger communities. The labor market is still largely localized in character. Moreover, the employees of local utilities, though dealing with local monopolies, are yet subject to competitive influences.

In short, the fact that many utilities have substantially exclusive control over the markets for their services is overshadowed in its effect on labor relations by the localization of utility markets and the competition in the labor market. Though the steam railroads and telegraphs serve primarily a regional or national market, the bulk of the demand for street railway, telephone, electric, gas and water services comes from the immediate locality. True, the interconnection movement is tending to widen the market for electric service, but by and large at least half of utility services are rendered locally whereas a steel manufacturer or a maker of electric equipment, for example, may function in a national or world market.

What effect does this characteristic have on labor bargaining? For one thing,

it tends to make the standard of wages and working conditions in the immediate locality a determining factor for that locality alone. Referring again to the effects of national agreements on the railroads during the War, it was found that owing to the variety of local customs and usages, habits of living and costs of living, standardization brought more difficulty than simplicity. Should the national standard be fixed to satisfy the requirements of workers in and around New York, or should it be fixed to satisfy the requirements of workers in and around Phoenix, Arizona? This hypothetical case illustrates the difficulty of reconciling standardization with equity in adjusting labor relations upon a national scale. With the relatively localized markets of utilities, presumably it should be easier to make the labor bargain fit local conditions and local requirements.

The probability of equitable labor relations is a different matter in which the competitive nature of the labor market figures. The one-sidedness of competition in the labor market has frequently been noted.²⁹ The employers are relatively few in number; they are likely to be closely organized and to exchange privately labor market information; they have a common interest in acting together in the scale of wages offered; they have greater financial resources to fall back upon when labor is a limiting factor than have workers acting as individuals. On the other hand, unless the union has survived from the days before large corporate and trust organizations, the prospects of trade union organization are slim; the workers are too numerous to be mobilized easily for effective collective action; they have to rely largely on scattered hearsay information regarding alternative jobs, and wages and working conditions

²⁸ 16 *American Economic Review* 129 (1926).

²⁹ See, for example, Solomon Blum, *Labor Economics* (Holt & Company, 1925), pp. 187-191, and S. H. Slichter, reviewing Douglas, Hitchcock and Atkins, "The Worker in Modern Economic Society," 34 *Journal of Political Economy* 100-124 (1926).

therein; individually they are comparatively deficient in reserves to tide them over periods of unemployment and their power to veto unfavorable terms of contracts is weakened correspondingly; protests against unfavorable terms of existing contracts are made effective chiefly by quitting, unless there happens to be an energetic union or an employee representation scheme that does not smother incipient revolts. These and other characteristics noted by the cited authors account for the one-sidedness of

labor negotiations. And although their analysis pertains to industry generally, it also applies to utilities with some differences in degree.³⁰

In the labor market a utility has to compete with private industries for the services of many classes of workers. In some cases, however, the jobs on utilities are not comparable in skill, duties or technique with any position in a purely private industry. This applies particularly to the operating jobs of transport utilities³¹ and to some ex-

³⁰ The Royal Commission of the Canadian Government which investigated the Toronto Telephone strike advocated government regulation of labor conditions in public utility enterprises to the extent indicated by the following quotation from their report, "Report on Toronto Telephone Strike," page 37.

"As far as the city of Toronto is concerned, and many other localities throughout the Dominion in which the Bell Telephone Company operates, this company has an absolute and complete monopoly. It enjoys this monopoly by the consent of the public. That this consent arises from a city's consideration of its own convenience rather than from any predisposition in favour of a particular company is not a matter of concern. The fact is that in the city of Toronto there is one company carrying on the telephone service for the entire city, and whether they like it or not the public generally of that city, so far as it may wish to make use of the telephone, is obliged to pay the Bell Telephone Company for its services. Viewed in this light, which we believe to be the right and proper one in regard to public service utilities where an absolute or quasi-monopoly exists, an element is introduced which justifies an insistence on the part of the public of a due regard for the welfare of employees which might be urged with less reason in the case of competitive industries. To the extent to which the citizens of Toronto have parted, either voluntarily or involuntarily, with their right to choose between competing concerns, and to that extent have parted, also, with their power to extend their patronage in the direction in which they believe the interests of justice and fair play may best be served, to that extent it is, we believe, not only their right, but their duty, to know and to insist upon a company profiting by their patronage, treating its employees in a manner which is equitable and fair, in other words, giving to its employees, whether they be women or men, a fair day's wage for a fair day's work. To the extent to which the Bell Telephone Company has profited by the necessities of its operators, or has secured services at a rate which would not have enabled those who rendered them to have lived, but for the support received from members of their own families, or in ways other than those provided by the company, to this extent, the profits of the company

have been derived by a species of sweating, or by the levying of a tax upon homes and individuals for which no compensation has been made.

"That the company has profited in this manner is sufficiently proved by the admissions of its own manager that the wages paid were not sufficient to meet the cost of board and clothing, and that *notwithstanding the operators had been obliged to work at a pace which was absolutely detrimental to their health*. The circumstance that these truths are lost to sight by the involved and intricate processes which obscure the workings of modern industry and commerce, or that by some they may be condoned as being in accord with common practice, is not a reason why in the public interest they should not be established. Moreover, it is, we believe, not more in the interests of justice and the maintenance of friendly relations between employers and employees, than it is likely to be in accord with the wishes of fair-minded investors who would hesitate to accept as profits, dividends which had been earned at the expense of either the health or well-being of those who had assisted in their making. And this leads us further to venture the opinion that in the interests of shareholders, employees and the general public alike, it is desirable that as much publicity as a due consideration for business secrets will permit should be given to the manner in which public or quasi-public utilities of the class of the Bell Telephone Company, carry on their operations. Public opinion may be expected to safeguard the welfare of those who serve the public, however remote that service may be, and in this connection it may fairly be assumed that the interests of capital, no less than labour, and of labour no less than of capital, will receive a due regard."

³¹ "Payment of any wage depends on the ability of an employer to receive from the public the money needed, not only for wages, but for all other expenses, including the payment of a fair rental to the owners of the property.

"Many of the company's employees have been in its service so long that it would be difficult for them to secure other equally remunerative work. (*Italics mine.*)

"Therefore, to enable these men to continue earning

(Continued on page 415)

tent to gas utilities. In the other utilities the comparability of occupations is greater and we might expect keener competition between utilities and private employers where competition is not limited by tacit agreements and forbearance. In this connection, a fact not without significance is that trade unions have succeeded in organizing effectively only the more or less unique jobs. Workers in the telephone, electric, gas, and water services are relatively unorganized into trade unions. The latest and most authentic published data regarding the degree of trade union organization in public utilities are given in Table VI.³² The figures for 1920 represent the high point of union membership (see Table VII), although some unions, like the Amalgamated Association of Street Railway Employees, substantially maintained or increased the

membership gained during the War. This compilation (Table VI) omits the numbers of union members employed in gas and electric plants. There are a few local unions of gas workers, and some of the local unions of the Brotherhood of Electrical Workers are entirely or largely made up of central station employees.

Trade unions perform important functions which tend to ameliorate the effects of one-sided labor market competition. It is obvious that a trade union under capable leadership exerts considerable influence through collective bargaining on workers' wages and standards of living. This influence is not altogether confined to union members, but, under the influence of competitive wage determination, extends also to unorganized employees in the same or competing occupations.³³ To the extent that non-union workers receive indirect benefits from union activities without paying therefor in union dues, there is merit in the hostile attitude of union members toward non-unionists. But for the present purpose, the important thing is to note that trade unions stand in the way of rigorous application of the one-sided competition that normally characterizes the labor market.³⁴

Probably from the workers' point of view the two most important effects of labor market competition are on wage

TABLE VI. PERCENTAGE OF TRADE UNION ORGANIZATION IN VARIOUS UTILITIES.*

UTILITY	PERCENTAGE OF ORGANIZATION	
	1920	1910
Water Transport.....	85.5%	28.9%
Steam Railways.....	57.5	23.5
Electric and Street Railways.....	52.9	21.8
Telegraph and Telephone.....	25.4	10.2
Post.....	24.8	31.6
Teamsters and Chauffeurs.....	11.9	7.0
Construction of Streets.....	8.3	2.4

* Leo Wolman, "Growth of American Trade Unions, 1880-1923," National Bureau of Economic Research, No. 6 (1924), p. 90.

(Footnote 31 continued from page 414)

their living, the street railway property must be maintained, and a rental paid to its owners . . .

"The company's employees, and the company's managers must realize together that, whatever may be the condition of the street railway business in St. Louis, they are in it together, and must make ends meet. . .

"Its employees should be encouraged by the fact, as shown by the following list (omitted here), that the company is now paying them a higher maximum hourly rate of wages than is paid in all but seven other large street railway properties in America." *The Public Servicer*, No. 4, p. 5 (May, 1928) (Employees' magazine of The St. Louis Public Service Company).

³² The figure given for telegraphs and telephones is somewhat misleading in that the bulk of organized workers, according to this compilation, are in the Order of Railroad Telegraphers.

³³ This extended sphere of trade union influence is sometimes used as an argument in organization campaigns. Say union members: "If the non-union man is benefited by union standards, why should he not pay in union dues for the benefits received."

³⁴ It is not intended to convey the impression that trade unions furnish the only obstacle to unrestrained competition in the labor market. The self-restraint of the employer, whether proceeding from humanitarian or business motives, may be another important check. In common with business men generally, public utility managers may feel that high wages and prosperity are closely linked, and that no long-time benefit will come from taking full advantage of its bargaining power over labor in competition with other employers of labor.

TABLE VII. VOTING STRENGTH OF TRADE UNIONS IN VARIOUS UTILITIES AFFILIATED WITH AMERICAN FEDERATION OF LABOR, 1920 AND 1927*

Organization	1920	1927
Water Transport		
National Marine Engineers Beneficial Association of United States and Canada	17,000	19,000†
International Longshoremen's Association	74,000	34,700
Masters Mates and Pilots	7,100	3,100
International Seamen's Union of America	65,900	15,000
Total	164,000	71,800
Steam Railways		
Brotherhood of Railway Carmen of America	182,100	80,000
Brotherhood of Railway Clerks	186,000	91,200‡
Order of Sleeping Car Conductors	1,200	2,300
International Union of Steam Engineers	32,000	30,200
International Brotherhood of Maintenance of Way Employees	54,200§	28,200
Brotherhood of Railway Patrolmen	2,600	900¶
Brotherhood of Railway Signalmen	12,300	8,000
Switchmen's Union of North America	14,000	8,900
Tunnel and Subway Constructors	3,000	4,000
Total	487,400	333,800
Electric and Street Railways		
Amalgamated Association of Street and Electric Railway Employees	98,700	101,200
Telegraph and Telephone		
Commercial Telegraphers	2,200	3,900
Order of Railroad Telegraphers	48,700	35,000
Total	50,900	38,900
Post		
National Federation of Federal Employees	38,500	20,000
National Association of Letter Carriers	32,500	40,000
National Association of Rural Letter Carriers	300	600
National Federation of Post Office Clerks	16,200	30,000
Railway Mail Association	14,400	19,400
Total	101,900	110,000
Teamsters and Chauffeurs		
International Brotherhood of Teamsters and Chauffeurs, etc.	110,800	86,500
Construction of Streets		
International Union of Pavers and Rammermen	1,900	2,000
Paving Cutters Union of United States of America and Canada	2,600	2,400
Total	4,500	4,400
Miscellaneous		
International Association of Blacksmiths	48,300	5,000
Boilermakers and Iron Shipbuilders	103,000	14,800
International Brotherhood of Electrical Workers	139,200	142,000
International Association of Fire Fighters	22,100	16,000
International Association of Machinists	330,800	72,300
American Federation of Teachers	9,300	3,500
Total	652,700	253,600
GRAND TOTAL	1,670,900	1,039,800

* Report of *Proceedings of 47th Annual Convention of American Federation of Labor*, 1927, pp. 28-29. It should be remembered that not all members of these unions are employees of public utility companies. Data are lacking to enable a separation in all cases between members in public utility and in private industries.

† 1922 figure—withdraw.

‡ 1925 figure—withdraw.

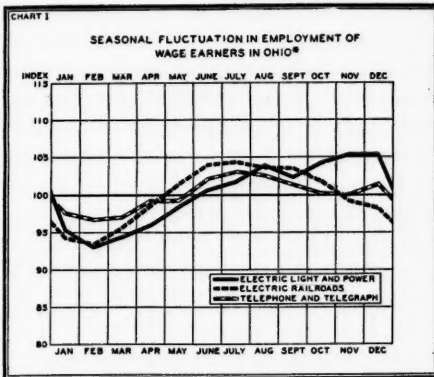
§ 1919 figure—suspended 1920-1922.

¶ 1922 figure—suspended.

rates and earnings, the latter concept including the idea of regularity of employment. Some utilities tend to adjust wage rates according to what has been called the "commodity theory." For example, a range of rates for certain occupations is established and authority given to foremen and superintendents to hire workers within that range, adjusting the wage rate to the individual largely according to the number of workers seeking jobs at the moment. On the other hand, a great deal is made of the greater steadiness of jobs in public utilities in order to attract and hold workers to their jobs and at the same time to justify to the workers wage rates that may be lower than the wage rates for similar work in private industries having less regular employment. The dependence of consumers on utility services is a presumption in favor of the steadiness of utility jobs. But this does not prove the point. Some utility jobs are, it is true, less broken by lay-off, but other positions are subject to seasonal fluctuations of 10% or more as the accompanying Chart I shows. By and large we may say that the clerical and operating forces have relatively unseasonal work, whereas the maintenance of plant and equipment and construction groups of employees are idle upward of 10% of the time.³⁵ The facts as to regularity of utility employment may or may not justify wage rates below the competitive level; nevertheless, competition is an influence consciously reckoned with by utilities in their wage policies and it has an important bearing upon all angles of labor relations.

Of the many other characteristics of utility business only three are here singled out for special mention of their

³⁵ Cf. Walter H. Dunlap, "Stability of Railroad Employment," 27 *Monthly Labor Review* 227-236 (August, 1928).



*Adapted from R. J. Watkins, Ohio Employment Studies, Bureau of Business Research, Ohio State University, Monograph No. 7 (1927).

effects on labor relations. The last mentioned of these shades over into what was meant by the earlier reference to "social factors."

Observers of tendencies in business organization have lately commented upon the swing toward "bankers' control" of industry. The utilities are not exempt from this influence. Railroads excepted, the operating organizations of utilities are of average size outside the larger urban centers, compared with such huge private industries as the Steel Corporation and the General Electric Company. The consolidation of operating utilities into large holding company systems in which banker-financiers wield a large influence, goes on apace. Accompanying this tendency and sometimes independent of it, goes a centralization of managerial decisions in the parent company or a separately organized management corporation. These changes are widening the gap between the workers and those having ultimate responsibility for deciding policies. What the effect will be on labor relations is problematical, but from past labor history there appears to be a strong probability that loss of personal con-

tacts with employees may ripen into unsympathetic labor policies unless the spirit and practices of "live-and-let-live" business competition thoroughly permeate the labor market. Partly to avoid this loss of personal contacts, many of the larger utility companies have followed the lead of, if not surpassed, private concerns in installing employee representation plans and welfare work of various descriptions. But while these organized substitutes for personal contacts may keep the immediate managers more or less informed and in touch with the attitudes or feelings of their employees, will these devices reach the minds of controlling bankers whose daily working materials are financial statements rather than men and women? Moreover, even though banker-managers favor employee representation and welfare plans, will they seek such an understanding of them as to distinguish between plans based on a feudalistic conception of labor relations and those treating employees as citizens of their industry possessing property rights in their jobs? Here is a problem that may dominate the field of labor relations in the future no less of utilities than of private industries. And the problem is hardly less different when we have court control under receivership proceedings³⁶ in place of financier control.

In addition to the direct contacts between producers and consumers, noted in another connection as a potential source of market expansion, the buyer-and-seller relations of utilities and their customers are characterized by a noticeable absence of credit. If not on a cash-in-advance basis, as on transport utilities, the extensions of credit are for relatively short periods. What effect this feature has on labor relations as a practical matter is not entirely clear. Perhaps the effect is not appreciable.

³⁶ See *Arthur v. Oakes*, 63 Fed. 310 (1894).

Nevertheless, the facts that the utility may cut off service if bills are not paid and that consumers have come more or less to depend on this service make more certain the flow of revenue into the utility. Hence there is less chance of inflation based on too rosy anticipations. Conceivably this might tend to stabilize employment in the absence of other influences working in the same direction. At least for certain employees the credit feature of a utility's business relations sometimes involves the disagreeable task of entering the premises of recalcitrant customers and breaking service connections.

Probably the outstanding quality of utility businesses is the timeliness of service. The satisfaction of demands for service cannot be postponed. This, of course, is a derivative of the common law obligation to give continuous and adequate service. It means that a utility becomes subject to peak loads, daily, seasonal and cyclical, which aside from raising financial problems have certain influences on labor conditions. For one thing, since service cannot be postponed, it means that a certain proportion of a utility's employees find that their working life is out of joint with the lives of their fellow-workers. It means, to be concrete, that a street railway man frequently can have very little social life because he is on duty at a time when his friends are off duty. Such inconveniences arising from the type of

market for a utility service have their effect upon the desirability or undesirability of certain jobs in the eyes of workers. Take another example: the peak loads of telephone utilities come at different times during the day, depending upon the habits of the community served. During the period of peak loads, exchange operators have to come on duty and work at high speed, but the hours of duty are at variance with the social habits of the community.³⁷

Another aspect of this same time element of service is the matter of continuity of work. In the street railway service, a considerable number of employees work for two or three hours in the morning and perhaps two or three hours in the evening with nothing in between. When such jobs can be dovetailed with other opportunities for work, the workers' position may be favorable, but frequently this cannot be done. One of the abuses claimed in many early street railway disputes was that motormen and conductors were kept hanging around car barns waiting for a run, and were not paid during the waiting period. Frequently, also, the fact that satisfaction cannot be postponed requires working exceptionally long hours under disagreeable conditions. Breakdowns in service during storms are cases in point. Also connected with the seasonal load factor is the regularity of work in shops. Assuming that all repair work is done inside the utility shops and not con-

³⁷ This factor was introduced in the recent hours-reduction case on the Australian railroads before the Commonwealth Court of Arbitration.

"Next to the suggested strain from responsibility, the main reason advanced by the union for the reduction claimed was that the employees are deprived of the ordinary opportunities of obtaining entertainment, self-improvement, home life or social intercourse, because they are compelled to work on shifts of irregular starting and finishing times, and of varying duration. Unquestionably railway employees in the running branch do labor under this disadvantage, and the disadvantage can never be removed so long as the com-

munity retains its present mode of railway traveling necessary to civilized living. Unquestionably, also the disadvantage is one to be recognized when dealing with the conditions of employment of the railway men who thus serve a public need. But in the main the men would still be deprived, as they are now, of many of the ordinary amenities of life. This disability is inseparable from their vocation, and was known to be so when they embraced it, and it is a matter which has influenced rates of pay and other conditions of employment." (*Locomotive Engineers Journal*, May, 1928, pp. 335, 336).

tracted out, the amount of work might be expected to vary according to the demands made upon equipment. Stabilizing employment in shops is thus an important element in labor bargaining.

III. Social Factors

This brings us to a brief discussion of the social factors influencing utility labor relations to an important degree. Probably the most important single problem of this nature is whether or not the dependence of consumers upon utility services necessitates placing labor relations on a different basis from that in private industries. Does this dependence, for example, justify compulsory arbitration of labor disputes; does it justify prohibition of strikes, a policy of individual bargaining as opposed to collective bargaining with independent trade unions or offers of labor contracts on terms less favorable than in non-utility industries; or should the jurisdiction of regulatory agencies be extended definitely to include supervision of labor relations?

Many intangibles are involved. Attitudes of mind toward these questions vary with the interests of individuals and with changing economic circumstances. Some persons honestly feel that the importance of utility services to the community at large justifies treating the employment of labor in these industries as "equivalent to the appointment of officers and the enlistment of soldiers and

sailors in military service".³⁸ Others doubtless agree with Chief Justice Taft that "it requires a more drastic exercise of control to impose limitations of continuity growing out of the public character of the business upon the employee than upon the employer,"³⁹ but still differ widely in the exact degree of compulsion which they feel necessary. At the opposite pole of thought are those who hold that no greater legal duties should be imposed on public utility employees than on employees in private industries.

Public policy has leaned in the direction of the same freedom of contract in utility labor relations as in other classes of labor relations. There are some exceptions to this policy. State laws penalizing railroad crews for abandonment of trains before reaching terminals have been passed and sustained.⁴⁰ A succession of mediation and arbitration statutes applying to railroads have set up governmental boards with varying powers over labor disputes.⁴¹ Colorado has a compulsory investigation act applying to utilities as well as to other industries and Kansas has a now quiescent compulsory arbitration statute covering all businesses affected with a public interest.⁴² In addition some state public utility commissions have been accepted as arbitration boards by agreement of the parties.⁴³ For the most part,

safety of the property jeopardized? The simple statement of the proposition carries its own condemnation with it." *Toledo, Ann Arbor & North Michigan Ry. Co. v. Pennsylvania Co.*, 54 Fed. 746, at 752-753 (1893).

⁴¹ A convenient summary of these laws may be found in A. R. Ellingwood, "The Railway Labor Act of 1926", 36 *Journal of Political Economy* 53 (February, 1928).

⁴² There is an almost voluminous literature dealing with the Kansas Industrial Court Act. Among the most recent and best discussions of the Act is Edward Berman, "The Supreme Court and Compulsory Arbitration", 18 *American Economic Review* 19 (March, 1928).

⁴³ See *Green v. Indianapolis Street Ry. Co.*, No. 8855, Ind. P. S. C., May 20, 1927; P. U. R. 1927 D 607.

³⁸ *Charles Wolff Packing Co., v. Court of Industrial Relations*, 262 U. S. 522 (1923).

³⁹ *Ibid.*

⁴⁰ As was said by the court in the early *Toledo* case, "An engineer and fireman, who start from Toledo with a train of cars filled with passengers destined for Cleveland, begin that journey under contract to drive their engine and draw the cars to the destination agreed upon. Will it be claimed that this engineer and fireman could quit their employment when the train is part way on its route, and abandon it at some point where the lives of the passengers would be imperiled, and the

however, the public policy has been one of "hands off,"⁴⁴ recognizing that willing service is more likely to lead to efficient performance.

With the exceptions noted, this laissez-faire policy has withstood repeated attempts to enact compulsory arbitration for transport utility employees. Those who urge the prohibition of strikes on public utilities usually rely on three chief arguments: (1) Since continuous operation of these industries is essential to the general public, the collective withdrawal of labor is a strike against consumers more than against the immediate employer; (2) Since utilities must serve all who come indiscriminately and may not abandon service without prior permission of the proper public officials, laborers in electing employment by a utility become subject to the same obligations; (3) Since the revenues of the utility and the return to the stockholders are controlled by public agencies, it is both logical and fair that wages which form the chief item of operating expense should be similarly controlled.

Against these views, organized labor strenuously insists that the strike weapon, even when used sparingly, is essential to insure equality of bargaining power with organized employers. If one workman quits or is discharged, he loses for the time being 100 per cent. of his earning power, whereas the employer loses only 1/100th or 1/1000th, as the case may be, of his labor force, which may be easily replaced. The collective quitting of work, on the other hand, equalizes the struggle by withdrawing 100 per cent. of the employer's labor

force and persuading others not to "scab." Or the union argument may take this form: The right to organize, bargain collectively, and quit work collectively is part of the liberty of contract guaranteed by the Constitution and compulsory arbitration would abridge that liberty. The strongest argument against compulsory arbitration, however, is that it is unworkable. English judges long ago learned the folly of trying to compel specific performance of personal service. It is difficult to see how an arbitration board, possessing powers of compulsion, would be differently situated. As long as we can not divorce the services of labor from the person of the laborer, the use of compulsion in labor relations will prove less efficient and economical than persuasive inducements.

This policy has left the field open for experiments with various substitutes for legal compulsion in the adjustment of labor relations. The result has been a variety of experiments as wide in scope as local conditions, personalities involved, and the examples of other enterprises warrant.

These experiments fall naturally into two groups: Those that are based on recognition of, and dealing with, independent trade unions and those based on individual bargaining or collective dealing with so-called "inside" or "company" unions. There is, however, another, less objective principle of classification. This principle can best be described as industrial citizenship. Effective recognition of collective bargaining implicitly treats workers as citizens of the industry having rights akin to

⁴⁴ See, e. g., *Citizens' Committee of Borough of Summit Hill v. East Penn Electric Co.*, P. U. R. 1928 E 288, where the Pennsylvania Commission refused to take jurisdiction of a complaint by customers against discontinuance of railway service on account of a strike. "The Commission has no power to determine the conditions upon which respondent's employees should

return to work nor does it have jurisdiction over wages or terms of employment in public utility operation." The Commission applied the rule adopted by the Interstate Commerce Commission in *Brotherhood of Sleeping Car Porters v. Pullman Company*, No. 20,007 (1928).

property in their jobs. The opposing view, though not always appearing in undiluted form, is, baldly stated, that workers are wards of industry having more privileges than rights in their jobs.

Collective bargaining in its true sense of negotiation between company officials and union officials who are independently chosen and paid by organized workers is comparatively widespread in the transport utilities, both steam and electric. Among telephone, telegraph, gas and electric utilities the illustrations of collective bargaining are relatively scattered.⁴⁵

A noteworthy contrast is found when collective bargaining on the railroads and electric railways is compared. The trade union on the latter utility is industrial in form, claiming jurisdiction over motormen, conductors, and all other occupations regularly compassed in street railway operations. On the steam railways, however, the unions are organized on the craft basis, with the organizations of transportation men generally accounted the strongest.⁴⁶ To this different basis of organization may be attributed differences in the psychology and tactics of negotiation of the street railway union and the railroad brotherhoods. The industrial union, on the whole, is less likely to seek advantages at the expense of weaker groups in the industry, whereas some craft

unions are able, and appear not averse, to gain material benefits at the expense of weaker unions. Attitudes toward arbitration likewise tend to differ. Members of the industrial union may use arbitration as a concession in bargaining whereas the weaker craft union uses arbitration as a step to recognition or a substitute for bargaining which it lacks cohesion and strength to compel.⁴⁷

The focus of orthodox collective bargaining is the trade agreement, which, as an instrument of industrial government, forms the constitution or sets the standards according to which individual employment contracts are supposed to conform. In the collective agreement are set forth those customs and practices which the negotiating parties agree shall apply to day-to-day individual relations during the life of the agreement. Too frequently, however, especially in weaker craft unions which lack vigilant leaders, the administration of trade agreements is ineffective.

Since the War the old-style trade agreement has undergone some adaptation in an endeavor by the unions to meet the challenge of "company unionism."⁴⁸ Union-management cooperative agreements represent bargaining based more on a psychology of mutual helpfulness than on the psychology of armed truces, although recognition of, and

⁴⁵ It is not unusual for the same company to refuse recognition to a union of workers in one department and to recognize and deal with workers doing the same work in another department or another part of the territory served. Illustrations are found of agreements with electrical workers doing outside, construction work, while inside electricians are dealt with individually or through a "company union."

⁴⁶ The four transportation brotherhoods are not affiliated with the American Federation of Labor. Practically all the shop craft unions are so affiliated. They have achieved some of the advantages of the industrial form of organization in federating for certain purposes in the Railway Employees Department of the A. F. of L.

⁴⁷ See J. G. Luhrs, "Time Has Come to Seek Railway Labor Law That Will Have Provisions Enforceable in Court," 10 *The Train Dispatcher* 423. (July, 1928). See also Report of Committee on Commerce of American Bar Association, *Proceedings*, 1928.

⁴⁸ No attempt is here made to argue the pros and cons or the merits of the controversy between the unions and the proponents of "company unions." See Seager, "Company Unions vs. Trade Unions," 13 *American Economic Review* 1 (March, 1923). The major point of dialectic difference between the two schools of thought is whether public utility managements should bargain with workers' representatives who are or are not also employed in the industry. The real difference is the more deep-seated one of a fundamental clash of economic interests and of views of labor's position in industry and rights in the job.

continuous dealing with, trade union representatives is an integral part of the altered policy. The danger is that these worthwhile experiments may be undermined by managerial greed or "hold-up" bargaining by the unions directly involved, or by the parasitic bargaining of unions not parties to such cooperative arrangements. Viewing public utility labor relations as a whole, the union-management cooperative movement appears to mark a drawing together, in form if not in substance, of the rival forms of industrial representation.⁴⁹

Considered broadly, approximately half of the wage earners employed by public utilities work under the policy best described as individual bargaining or collective dealing, as distinguished from collective bargaining. Some of the detailed practices which make up this general type of policy are found even among companies which accept the collective bargaining principle, but these instances serve to make the contrast clearer.⁵⁰

Without reviewing the details of the managerial policies, they may be grouped under two general headings: (1) the recruiting of a labor force; (2) inducing efficient and continuous service. Under the first heading come those activities commonly labeled employment management, which includes getting, examining and selecting applicants, training applicants for their jobs, promoting and transferring employees according to demands of the service, the capabilities of workers or seniority in service with the company. Under the second grouping come those activities normally within the

industrial relations department. These also are ordinarily of two types: (1) restraints to maintain discipline through shop rules, such as employee representation plans, (2) encouragements to increase efficiency, reduce turnover, and generally stabilize the labor force. Where collective bargaining with an outside union is not the policy, most of these activities are carried on through an employee representation plan for the adjustment of wages and disputes regarding discipline and an employees' benefit association for the administration of savings, insurance, and pension funds, loan funds and recreational activities. Through the latter agency the utility affords the means, sometimes contributory, sometimes on a gratuity basis, of financing the chief hazards of a worker's life; namely, interrupted earnings caused by sickness, accident, death, old age, and in rare cases unemployment. All these detailed managerial policies may be summarized in the statement that their underlying purpose is to substitute for legal compulsion the moral obligations and pecuniary advantages of loyal, continuous and efficient service to the company; they constitute the means whereby management induces employees to recognize and assist it to meet its obligations to consumers.

From this standpoint the managers of utilities might be said to act as joint agents of owners and consumers in dealings with their employees. Taking this view, equitable labor relations become one of the obligations of management to consumers, and the latter through their representatives are in a measure responsible for fair treatment of labor.

⁴⁹ See, e. g., 27 *Monthly Labor Review* 657-679 (1928).

⁵⁰ Although some of these practices, like employment management, do not conflict, except perhaps indirectly, with the interests and activities of union members, other policies, such as insurance, stock ownership, pensions, are designed, or may tend, to undermine the loyalty of union members to their organization. There

is abundant evidence that trade unions are seeking to make their organizations equally attractive from the investment point of view through various benefits, insurance, banking, and savings schemes. See 26 *Monthly Labor Review* 1-16, 213-241, 889-904 (1928); 27 *idem* 209-226, 874-879.

Where the interests of owners and consumers clash, however, the joint responsibility of management tends to give way to the single responsibility to owners. This is the feature of utility labor relations that at the bottom has produced most difficulties. From the public standpoint, a frank and unwavering adherence to the attitude that management has joint responsibilities in labor relations is much to be desired. Were managements sincerely and honestly to adopt this view, the tension, hostility and under-cover distrust that characterize the industrial relations of many utilities would be greatly reduced.

In concluding this survey of the more or less distinctive features of labor relations on utilities, as these are related to technological, marketing, and social considerations, two matters need re-emphasis. First, the distinctions noted are for the most part differences in degree, more than in kind. We find that labor relations in the utility field pre-

sent much the same range of problems as in private industries. But some of these problems are more acute in the utilities because of the nature of these industries as a class. Second, significant differences may be summarized as the mental attitudes of the parties to the labor bargain. Attitudes of mind are not as ephemeral and intangible as the phrase indicates. They are the roots of human behavior. Observed differences in behavior of employers and employees in utility industries, compared with purely private enterprises, necessitate policies that take account of these differences. The peculiar blending of compulsion and freedom which colors all the economic relations through which public utility services are rendered produce no less important effects on labor relations than on relations with consumers, investors, and other economic groups. Against this background the conduct of utility employers and employees needs more study than it has yet received.

DEPARTMENTS

The departments of the JOURNAL are edited specifically with regard to their interest to the readers who are especially concerned with the economic problems of land and public utilities. For the most part the material for the departments will be prepared by members of the staff of the Institute for Research in Land Economics and Public Utilities.

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SUMMARIES OF RESEARCH

PUBLIC UTILITY FINANCING DURING THE FIRST AND SECOND QUARTERS, 1929.

The volume of public utility financing was of less significance, compared with other forms of financing, during the first six months of 1929 than it has been for a number of years. This fact is indicated in Table I. The comparative importance of public utility issues is brought out by expressing the utility total as a percentage of the total of corporate financing and also by expressing it as a percentage of the grand total of all financing (government plus corporate).¹ Compared to the grand total of corporate plus government financing, the public utility percentage was lower in 1929 (22.68%) than for any year since 1923. The high point was reached in 1927, with a decline similar to that noted in the case of corporate total. Not since 1920 have public utility issues constituted so small a part of the total of corporate financing as they have in the first two quarters of the current year when the percentage was 25.74% of the total. Beginning in 1921, when it was 28.07%, utility financing increased in importance until it reached almost 41% of the total in 1927. Last year (1928) witnessed a decline, a movement which continued into 1929, as noted. Comparing the 1929 percentage with that for 1928 the decline is considerable. In the first half of 1928 utility issues comprised 29.90% of the grand total and 39.12% of the total corporate financing. The correspond-

ing figures for 1929 were 22.68% and 25.74%.

Two factors combined to cause a decrease in the comparative importance of public utility financing. One of these was a decrease in the volume of utility financing. The other was an increase in other corporate and government issues. During the first half of 1928, the public utility issues totalled \$1,701,388,190; the total corporate issues, \$4,348,693,302; and the grand total of government plus corporate, \$5,690,567,453. The first two quarters of 1929 showed a utility total of \$1,417,698,483 (a decrease of almost \$284,000,000), contrasted with an increase of \$1,158,200,000 in corporate financing, bringing its total to \$5,506,882,723. An increase of \$560,000,000

TABLE I. VOLUME OF PUBLIC UTILITY ISSUES EXPRESSED AS A PERCENTAGE OF CORPORATE FINANCING AND AS A PERCENTAGE OF GOVERNMENT PLUS CORPORATE FINANCING.*

Year	Percentage of Government Plus Corporate Financing	Percentage of Total Corporate Financing
1919.....	10.79%	16.87%
1920.....	12.39	16.75
1921.....	15.96	28.07
1922.....	18.69	31.90
1923.....	22.81	35.21
1924.....	24.08	39.85
1925.....	24.21	36.41
1926.....	26.57	37.26
1927.....	30.26	40.90
1928.....	26.53	33.97
1929.....		
1st quarter.....	26.14	28.78
2nd quarter.....	19.21	22.51
Six months.....	22.68	25.74
1919-June 30, 1929...	22.99	32.79

¹ The public utility volume figures used include "New Corporate Issues in the United States." The corporate figure is the total of the corporate issues under "Summary of Corporate. . . Financing," and the grand total of all financing is the grand total figure for the same group.

*Taken from the *Commercial and Financial Chronicle* monthly summary of financing.

brought the grand total of government plus corporate issues to \$6,250,905,982.

The index number of the volume of new public utility security issues (Table II) shows that the decline in volume came during the second quarter of 1929. The index number for the first quarter was 398, above that for the first quarter of 1928 (340). The second quarter of 1929 had an index number of but 292, compared with 487 for the same period the preceding year. Whether this decline will be made up in the last two quarters of the year is difficult to say. The general observation might be made on the basis of the quarterly index numbers in Table II, that since 1919 the first two quarters of each year have usually been larger than the second half of the year. The 1929 volume is still significantly above the average for the period, however. The first-quarter volume has been exceeded in but one first quarter (1927), while the second-quarter volume is above the second-quarter vol-

ume for all years except 1926, 1927 and 1928.

New and Refunding Capital

New capital was noticeably more important in the utility total during the first half of 1929 than for the year 1928. Of the total utility financing, which amounted to \$1,417,698,483 to June 30, 1929, \$1,106,688,176², or 78.1%, were new capital issues, and \$311,010,307, or 21.9%, were refunding issues. These percentages compare with 71.5% new and 28.5% refunding capital in 1928.

Character of New Capital Issues. An analysis of this \$1,106,688,176 of new capital securities issued in 1929 shows a significant increase in the importance of stocks. For the first six months this year, the new capital issues were divided into long-term bonds (37.74%), short-term bonds (2.00%), and stocks, (60.26%). The percentages for 1928 were: long-term bonds, 50.46%; short-term bonds, 6.06%; and stocks, 43.48%. The stock percentage for 1928 set a high

² Total from the *Commercial and Financial Chronicle*.

TABLE II. INDEX NUMBER OF VOLUME OF PUBLIC UTILITY FINANCING, 1919-1929.*

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
By Months											
January.....	100	67	55	46	122	112	199	173	259	176	169
February.....	48	28	25	47	66	89	172	125	314	220	248
March.....	25	27	25	43	94	78	144	115	158	190	268
April.....	5	38	25	50	64	112	69	182	165	318	107
May.....	15	38	35	150	66	233	103	230	214	203	287
June.....	26	20	9	96	92	122	118	181	130	317	109
July.....	41	25	115	44	21	104	90	177	97	48	.....
August.....	20	11	33	22	40	62	93	58	92	82	.....
September.....	54	44	34	147	34	77	110	38	168	169	.....
October.....	24	33	33	77	59	112	92	123	261	180	.....
November.....	8	21	119	43	161	69	102	136	212	127	.....
December.....	20	63	53	54	135	111	153	114	433	167	.....
By Quarters											
1st quarter.....	100	71	61	80	164	162	299	240	424	340	398
2nd quarter.....	27	56	41	172	129	271	168	344	295	487	292
3rd quarter.....	67	47	105	123	55	141	170	159	207	178	.....
4th quarter.....	30	68	119	101	206	169	201	217	528	275	.....
By Years.....	100	107	145	212	246	330	373	427	647	570	.....

*Volume for January, 1919, First Quarter, 1919, and year 1919 used as basis for computing index numbers for months, quarters, and years respectively. Compiled from the monthly record of new capital flotations of the *Commercial and Financial Chronicle*.

TABLE III. WEIGHTED AND SIMPLE AVERAGE YIELD AT OFFERING PRICE OF NEW PUBLIC UTILITY SECURITY ISSUES*

Year	Types of Debt Obligations					
	All Maturities		Long-Term		Short-Term	
	Weighted Average Yield	Simple Average Yield	Weighted Average Yield	Simple Average Yield	Weighted Average Yield	Simple Average Yield
1919.....	6.55	6.68	6.21	6.25	6.78	7.03
1920.....	7.55	7.64	7.52	7.59	7.59	7.68
1921.....	7.13	7.47	7.11	7.42	7.27	7.66
1922.....	6.06	6.34	6.03	6.32	6.39	6.53
1923.....	6.04	6.31	5.99	6.26	6.73	6.72
1924.....	6.03	6.14	6.04	6.16	5.97	6.04
1925.....	5.58	5.81	5.66	5.83	5.55	5.86
1926.....	5.53	5.72	5.52	5.70	5.77	5.82
1927.....	5.24	5.61	5.25	5.57	5.11	5.77
1928.....	5.27	5.58	5.21	5.51	5.80	5.90
1929.....						
1st quarter.....	5.47	5.89	5.44	5.77	6.24	6.49
2nd quarter.....	5.00	5.97	4.88	5.75	6.36	6.65
6 months.....	5.21	5.93	5.13	5.76	6.33	6.58

*Computed for the issues in the monthly record of financing, Commercial and Financial Chronicle. Certain issues are omitted. See Footnote 3.

mark for that class of issues up to that time, but this high mark was exceeded very considerably during the first half of 1929. At no time has the stock percentage in any other year risen above 38% of the total financing.

Yield at Offering Price on New Public Utility Issues. The first six months of this year witnessed an increase in the price of capital as measured by the yield at offering price on new public utility debt issues. The simple average yield (computed by dividing the sum of the yields by the number of issues) increased from 5.58% in 1928 to 5.89% for the first quarter of 1929, 5.97% for the second quarter, and 5.93% for the first six months.³ (See Table III).

Since 1920 the yearly simple average yields have steadily declined. The first

half of 1929, therefore, witnessed a change in the movement of the yield. This may have particular significance in interpreting the growth of the percentage of stock issues. The weighted average yield, in contrast, decreased slightly from 5.27% to 5.21%. The result was that the differential in the weighted and simple average yields increased. This differential is now at a high point (.72%) for the 10-year period compared with a previous high of .37% in 1927. This means that large issues are in a more favorable position with respect to yield than at any other time during the period. The simple average yield on both long- and short-term issues increased from 1928 to 1929; the yield on long-term issues from 5.51% to 5.76%; that on short-term issues from 5.90% to 6.58%. The weighted average yields showed a

³The yields are computed from the issues shown in the *Commercial and Financial Chronicle* monthly record of new capital flotations. Certain issues have been omitted. For a very few, adequate information was not available. Issues of companies doing a foreign business were excluded. Also, in 1929 certain investment company issues were removed. The problem of differentiating between some forms of holding companies and some forms of investment trusts can be mentioned only. The

investment trust issues omitted were classified by Moody as investment rather than as public utility companies. Two of them might possibly be classed as of the management-holding type; the others seemed very apparently investment rather than management organizations. These companies issued primarily stocks, however, so that the total of debt issues eliminated in this score amounted to but \$6,000,000.

mixed movement; whereas the yield on long-term issues fell from 5.21% to 5.13%, that on short-term issues increased from 5.80% to 6.33%. Attention might be called to the insignificant position of short-term issues in the total volume of financing.

Holding and Operating Company Issues

In order to characterize public utility financing more fully an attempt was made to classify the issues of debt obligations according to the type of company, whether operating or holding, which issued them. A classification of this kind seems significant. Holding and operating companies (using the terms as they are commonly applied) have different types of assets to pledge as security for the payment of debt obligations; their income flows differ in regularity and character; the purposes for which they issue securities often vary. The issuance of operating company securities is regulated by commissions in about half the states. The majority of the states also exercise some form of direct control over operations. These factors suggest the probability of a difference between operating and holding company financing practices.

The selection of an indisputable basis of differentiation between the two types of companies is rather difficult. Not only are there companies which own and operate physical property and own securities of subsidiaries at the same time, but there are also several varieties of holding companies. Some holding or-

ganizations may perform no financial or managerial services for which they receive compensation from the operating units on a fee basis. The income of this group is derived from interest and dividends on securities owned. Other holding companies may perform various services for subsidiaries. As a result, their income may include considerable amounts charged as fees against the subsidiary companies. A system of classification which would provide for all possible situations would be too detailed in nature and too difficult to apply for our present purposes.

Therefore, the classification introduced here is a primary, basic differentiation. Holding companies are defined as companies holding securities only, operating no physical producing or distributing units. Operating companies are defined as companies holding physical property and deriving at least part of their income from the operation of such properties. Operating companies may include companies holding securities, but the holding company class should not contain companies owning physical plant.⁴ The attempt was to make the holding company group an exclusive classification—all similar in that no physical property was owned. The operating group is the inclusive group. Exception may be taken to this classification. It is not final. The distinction seems to rest, however, on valid economic, financial and legal grounds.⁵

For the present a comparison of the two types of financing in two respects only will be attempted. The first in-

⁴ Management companies, which own no operating properties but concern themselves only with the furnishing of management or financial services, are classed as holding companies. Their interests and point of view seem to resemble those of the holding group more closely than those of the operating. The nature of the income of this management group is also different from that of the operating group. The amount of financing done by such management groups on their own account, is however, inconsiderable.

⁵ A classification upon this basis seems to have significance from the financial point of view. A survey of some 2400 issues, so classified, indicates that the securities classed as holding differed noticeably from the operating issues. Backed by the results of this study, this basis of differentiation is submitted for consideration, at least tentatively. Criticism and suggestions will be welcomed.

volves a comparison of the volume of holding and operating company debt financing since 1919. The second involves a survey of the yields (at offering price to maturity) on the two types of issues, also for the period beginning 1919. No explanations are attempted.

Volume of Debt Financing—Holding and Operating. The period from 1919 to date has witnessed several pertinent changes in the relative volume of holding and operating company debt issues. The relative importance of the two types at various years is apparent from Table IV. The volume of holding company issues fell sharply from 1919 to 1921, while the operating volume increased. Since 1923 the holding company volume has increased much more rapidly than the operating. Expressed in percentages, holding company issues fell from 31.46% of the total volume in 1919 to 4.02% in 1921. Since that time, however, the holding company issues have increased steadily in importance, until in 1928 for the first time holding issues exceeded operating company financing. An interesting observation is that holding companies came into the position of

leadership in 1928, not so much because of an increase in the volume of their financing (\$8,000,000 increase from 1927 to 1928) but rather because of a decline of almost \$900,000,000 in operating company financing. It should be kept in mind that the figures given are for debt obligations only; stock issues should be included to get a correct picture of the total financing by types of company.

The present year (1929) showed a mixed tendency for its first two quarters. Holding company issues were almost three-quarters (72.5%) of the debt financing for the first quarter, and but 15.14% for the second.⁶

Yield on Operating and Holding Company Issues. The movement of the

⁶ A large share of the increase in operating company financing during the second quarter of 1929 is due to the issuance of \$219,000,000 American Telephone and Telegraph Ten Year Convertible Gold Debentures. This Company is difficult to classify. It holds a large amount of subsidiary company securities, yet it operates directly numerous interstate connecting properties, necessitating considerable investments in plant and equipment. Hence a very considerable percentage of the revenues of the company come from its operating activities. Following the basis of differentiation here submitted, it is classified as an operating company.

TABLE IV. VOLUME OF NEW PUBLIC UTILITY DEBT ISSUES CLASSIFIED ACCORDING TO TYPE OF ISSUING COMPANY, 1919-JUNE 1929

Year	Total Volume	Operating Companies	Holding Companies	Percentage Issued by Operating Companies	Percentage Issued by Holding Companies
Total, 1919-1928...	\$9,220,849,800	\$6,555,071,200	\$2,665,778,600	71.09%	28.91%
1919.....	354,542,700	243,007,100	111,535,600	68.54	31.46
1920.....	409,553,100	369,525,100	40,028,000	90.22	9.78
1921.....	516,553,000	495,798,000	20,755,000	95.98	4.02
1922.....	660,791,000	568,402,500	92,388,500	86.02	13.98
1923.....	859,476,300	769,778,300	89,698,000	89.56	10.44
1924.....	942,417,900	771,085,900	171,332,000	81.82	18.18
1925.....	982,201,000	611,791,000	370,410,000	62.29	37.71
1926.....	1,242,059,500	910,818,500	331,241,000	73.33	26.66
1927.....	1,945,277,500	1,230,142,000	715,135,500	63.24	36.76
1928.....	1,307,977,800	584,722,800	723,255,000	44.70	55.30
1929.....					
1st quarter.....	278,497,500	76,482,500	202,015,000	27.46	72.54
2nd quarter.....	354,724,000	301,027,000	53,697,000	84.86	15.14

simple and weighted average yield at offering price on the holding and operating company issues of debt obligations is shown in Table V. Several tendencies indicated there deserve mention. First, both the simple and weighted average yields on operating company issues have been consistently below the corresponding holding company

also reached a high point in 1921, but it fell off noticeably in 1922 and again in 1925. No definite tendency has been apparent since that time. As previously noted, holding company yields were lower than operating company for the first quarter of the current year but a reversal during the second quarter resulted in the highest differential for the period.

TABLE V. WEIGHTED AND SIMPLE AVERAGE YIELD AT OFFERING PRICES OF NEW ISSUES OF DEBT OBLIGATIONS OF PUBLIC UTILITIES, BY HOLDING AND OPERATING COMPANY GROUPS.*

Year	Weighted Average Yield			Simple Average Yield		
	All Issues	Operating	Holding	All Issues	Operating	Holding
1919.....	6.57	6.53	6.67	6.68	6.63	6.89
1920.....	7.43	7.40	7.63	7.62	7.58	7.95
1921.....	7.14	7.09	8.15	7.50	7.46	8.05
1922.....	6.08	5.99	6.68	6.32	6.26	6.83
1923.....	5.99	5.92	6.58	6.30	6.27	6.56
1924.....	5.97	5.86	6.50	6.13	6.08	6.40
1925.....	5.59	5.48	5.78	5.83	5.77	6.09
1926.....	5.52	5.38	5.90	5.70	5.64	5.90
1927.....	5.22	5.13	5.38	5.38	5.30	5.80
1928.....	5.26	5.09	5.39	5.58	5.41	5.79
1929.....	.....	.....	.....	.....	.....	.....
1st quarter.....	5.47	5.50	5.46	5.89	5.83	5.96
2nd quarter.....	5.00	4.82	5.99	5.97	5.83	6.19

*Computed for issues shown in monthly record of new financing in *Commercial and Financial Chronicle*. Because of the additional information desired for this study, some issues included in previous surveys had to be omitted here because of insufficient information. This accounts for the difference in yield between the two tables in some years.

yields, with a minor exception in the first quarter of 1929 when the holding company weighted average yield was below the corresponding operating company average. This condition was reversed during the second quarter, at a time when holding company issues were much less significant, when the holding yield (weighted) exceeded the operating by the largest margin since 1919.⁷ The operating company simple average yield has been consistently below the holding company average.

The margin of holding company yield over operating company yield reached a high point in 1921. Since 1923 no definite movement of the margin has been apparent. The holding company margin in the case of the weighted averages

The simple average yield on all debt obligations increased from 1928 to 1929 and for the second quarter in 1929 over the first. Both operating and holding issues showed the same general movement. The operating company yield did not change from the first to the second quarters, although the volume quadrupled; the holding company yield increased noticeably and its volume was cut almost to a quarter.

The weighted average yield for all issues increased from 1928 to the first quarter of 1929, but, contrary to the movement of the simple average yield, declined in the second quarter. Large issues apparently benefited during the second quarter. The operating weighted average yield declined from the first to the second quarters of 1929; the holding yield increased noticeably.

Another point of interest is that, whereas the simple average yield on operating company issues remained the same from the first to the second quarters of 1929 at 5.83%, the weighted average yield fell from 5.50% to 4.82%, a decline of .68%. This seems to indicate an added advantage to the large operating company issues. The holding company issues yielded more during the second quarter, measured by either the simple or weighted average yield.

ROY L. REIERSON.

⁷ This statement is based upon a comparison of yearly averages for 10 years with monthly averages for one year. The 1929 yearly average may show a reversal of tendency.

COMMENTS ON LEGISLATION AND COURT DECISIONS

PUBLIC UTILITY LEGISLATION DURING 1929.

A SURVEY of public utility legislation adopted during the present year reveals no changes of far-reaching or monumental importance in the established regulatory system dealing with public utilities in this country. Perhaps the outstanding achievement is the revision by Wisconsin of almost its entire body of public utility laws. The legislature not only revised the Railroad Commission Act¹ and the Public Utilities Act² but also the chapters relating to corporate organization of railroads,³ state control of their construction,⁴ regulations dealing with their operation and liabilities,⁵ street and interurban railways⁶ and municipal acquisition of public utilities.⁷ While no vital changes have been made extending the powers of the Commission, the revision, simplification and elimination of duplicate and obsolete provisions reveal legislative draftmanship of the highest calibre.

General Extensions of Commission Authority

Statutes generally extending the scope of commission regulation, except over

motor carriers, which are dealt with separately, have not been numerous during the present year. Perhaps the only state which conferred a number of important additional powers upon its Commission in 1929 was New Hampshire. These powers were incorporated in various acts: an act⁸ providing that the Commission could upon petition order the joint use of railroad facilities including lines, tracks, rights-of-way, and stations; an act⁹ providing for the payment of Commission investigation expenses by utilities in certain instances; an act¹⁰ authorizing the Commission to order the Attorney-General to appear in any proceeding to protect the interests of the people; authority to compel utilities to cease exports of electrical energy;¹¹ power to fix reasonable standards for the sale of coke;¹² authority over certain short-term securities;¹³ authority to regulate aircraft and airmen;¹⁴ power to license the placing of facilities upon public lands;¹⁵ and an act¹⁶ conferring upon the Commission power over contracts for the sale of electrical energy.

⁸ New Hampshire, P. A. 1929, C. 180.

⁹ P. A. 1929, C. 99, amending sec. 35 of C. 238 of P. L. 1926.

¹⁰ P. A. 1929, C. 144, adding sec. 9a to C. 16 of P. L. 1926.

¹¹ P. A. 1929, C. 106, amending sec. 240 of C. 240 of P. L. 1926.

¹² P. A. 1929, C. 40.

¹³ P. A. 1929, C. 136.

¹⁴ P. A. 1929, C. 182.

¹⁵ P. A. 1929, C. 113, amending secs. 13-16 of P. L. 1926.

¹⁶ C. 179, amending C. 242 of P. L. 1926 by adding sec. 20a: "Any public utility shall make, renew or extend any contract for the delivery of electrical energy to another utility upon such terms and conditions as the public service commission shall order to be for the public good."

¹ Wis. Stat. 1927, C. 1925, revised by secs. 170-225, C. 504, Laws 1929. C. 504 does not become effective until Jan. 1, 1930.

² Wis. Stat. 1927, C. 196, revised by secs. 226-304, C. 504, Laws 1929.

³ Wis. Stat. 1927, C. 190, revised by secs. 1-33, C. 504, Laws 1929.

⁴ Wis. Stat. 1927, C. 191, revised by secs. 34-58, C. 504, Laws 1929.

⁵ Wis. Stat. 1927, C. 192, revised by secs. 59-128, C. 504, Laws 1929.

⁶ Wis. Stat. 1927, C. 193, revised by secs. 129-169, C. 504, Laws 1929.

⁷ Wis. Stat. 1927, C. 197, revised by secs. 305-318, C. 504, Laws 1929.

A Michigan law¹⁷ requires gas and electric companies to procure a certificate of convenience and necessity, prior to the transaction of any business or the commencement of any operations or extensions. Natural gas companies engaging in the transportation of gas or its carriage by pipe lines are now subjected to Commission regulation. The act provides for the regulation of rates, contracts, services, accounts and limits the right of eminent domain to use of highways of the state only for such pipe lines as are to be used for the exclusive transportation of gas within the state of Michigan.¹⁸ Corporations or persons engaged in the transportation of crude oil or petroleum through pipes were also subjected to the regulatory authority of the Commission.¹⁹

The Texas Railroad Commission was given authority to supervise matters relating to oil and gas conservation and the prevention of waste in this industry.²⁰ By the provisions of the Ice Regulation Act²¹, the Arkansas Commission was given complete power to regulate the use, sale, manufacture, distribution and delivery of ice as a public utility. Certificates of convenience and necessity are to be issued and the Commission is to have full power to regulate and establish rates and charges, rules and regulations, and control the services of such utilities. In Idaho reparation powers were conferred upon the Commission²² in the event of discriminatory or excessive charges by a railroad or other

common carriers. The Commission is to issue a certificate showing unlawful charges which shall be *prima facie* evidence.

By a California statute of 1929, C. 378, the charters of public utility corporations could not be extended without prior consent of the Railroad Commission. The New York Legislature authorized the Public Service Commission to approve operating contracts between street railways or railroads that have substituted bus for railroad operations and omnibus corporations, where the street railway or railroad is the owner of all the capital stock of the omnibus company.²³

Changes in Commission Practice, Procedure, and Organization

Among the important procedural changes enacted during 1929, the addition of section 380A to Article 23 of the Maryland Code possesses significance. The Commission²⁴ had denied the right of a foreign holding company to acquire the securities of four small electric companies on the theory that the public would receive no benefit from such acquisition. The Court of Appeals²⁵ reversed this decision, stating that the Commission could deny such an application only in the event that the Commission found a positive public detriment. The Commission thereupon recommended and obtained the enactment of a law²⁶ which places on a utility the burden of showing

¹⁷ Michigan, P. A. 1929, No. 69.

¹⁸ Michigan, P. A. 1929, No. 9.

¹⁹ Michigan, P. A. 1929, No. 14.

²⁰ Texas, G. L. 1929, C. 313.

²¹ Arkansas, Acts of 1929, Act 55, p. 110.

²² Idaho Session Laws, 1929, C. 233, p. 328.

²³ New York, L. 1929, C. 638.

²⁴ *In re Electric Public Utilities Co.*, P. U. R. 1927E 609.

²⁵ *Electric Public Utilities Co. v. West*, 140 Atl. 841 (Maryland, 1928).

²⁶ Maryland, L. 1929, C. 520: "In all proceedings before the Commission in which the permission, approval, authority or consent of the Commission shall be applied for under the provisions of Sections 379, 390, 391 or 394 of this sub-title, the Commission may require that it be shown by clear and satisfactory evidence that the granting of such permission, approval, authority or consent is required by, or consistent with, the public interest, in addition to compliance with other requirements of said sections; and when such proof is required hereunder the burden of proof shall be upon the applicant."

that the Commission approval sought is consistent with or required by the public interest.

In an act²⁷ creating a new Kansas Public Service Commission it was relieved of duties relating to the state tax and inheritance tax departments. By another act²⁸ the provisions for review of Commission proceedings were greatly broadened. Briefly the new law provides that any person, firm, corporation, etc. may apply to the Commission for a rehearing, and that upon denial of a rehearing, a petition for review of any Commission decision may be made to the district courts of the state, which may set aside decisions of the Commission in the event of unreasonableness or unlawfulness of such Commission order or decision. The act forbids the introduction of new evidence during such review proceedings and the mere filing or pendency of proceedings for review shall not of itself stay orders of the Commission. The district courts may during the pendency of such proceeding stay in whole or in part an order or decision of the Commission.

The Ohio Legislature created a Division of Investigation in the Commission under the control of a superintendent who shall take over the functions of the executive secretary of the Commission. Provision is also made for the appointment of attorney examiners,²⁹ who may conduct hearings upon applications for increased rates. The provisions of the Ohio Commission Act relating to the establishment of rates were also revised during the past session.³⁰ In substance

they require Commission approval before any rate, change in rate, rental or classification, or any rule or regulation affecting any rate becomes effective. When an application is made for approval of an increased schedule of rates, the utility must produce a detailed inventory and appraisal of its property, a complete operating statement during its last fiscal year and a statement of expense and income anticipated under the proposed schedule. Provision is also made for the refunding of excessive payments by requiring utilities to file bonds.

A Wisconsin law³¹ provides that "for rate-making purposes the Commission may consider two or more municipalities as a regional unit, where the same public utility serves said municipalities, if in its opinion the public interest so requires." Ten patrons are now authorized to file complaints relating to rates or services with the Connecticut Commission.³² Authority to cooperate with the Interstate Commerce Commission and state commissions was conferred upon the Nevada Commission.³³

Motor Carriers

The utility most frequently subjected to regulation by the legislatures during the year was motor carriers. With the adoption of comprehensive motor carrier regulatory laws by Georgia, New Mexico, Tennessee and Florida, all states now possess statutes regulating motor carriers as common carriers. In addition a number of states either extended the scope of such regulatory acts or passed amendatory acts.

The Georgia Motor Carrier Act³⁴ included vehicles transporting freight or

²⁷ Kansas, Laws 1929, C. 259, p. 427, repealing C. 258, L. 1925.

²⁸ Kansas, Laws 1929, C. 220, p. 371, amending secs. 66-118 of R. S. 1923.

²⁹ S. B. 66, L. 1929, sec. 496 of the Ohio Code reenacted.

³⁰ S. B. 66, L. 1929, sec. 614-20 of the Ohio Code reenacted.

³¹ Laws 1929, C. 390, amending sec. 196.02, Wis. Stat. 1927.

³² Connecticut, P. A. 1929, C. 199.

³³ Nevada, Laws 1929, C. 51, p. 73.

³⁴ Georgia, S. B. 112, approved August 29, 1929, effective Oct. 1, 1929.

persons for hire except those operating exclusively within the corporate limits of any city or town. Taxicabs and carriers of agricultural products owned by producers are also excluded from Commission regulation. Like other acts it requires certificates of convenience and necessity and the filing of indemnity bonds, and gives the Commission power to regulate rates and services. Carriers may confine themselves to the transportation of either white or colored passengers but shall carry both only under regulations imposed by the Commission. Railroads are authorized to operate such carriers and own their securities.

By the provisions of the New Mexico regulatory act³⁵ motor carriers are defined as common carriers transporting persons or property for hire between fixed termini or over a regular route. The Corporation Commission is empowered to fix and establish rates, rules, and regulations, require reports and indemnity bonds, license fees and regulate matters relating to safety. Interstate operators are to secure a certificate of registration from the Commission which is to prescribe its form.

The comprehensive motor carrier act³⁶ passed by the Tennessee Legislature confers upon the Commission the power to issue certificates of convenience and necessity to carriers of freight as well as passengers operating either within or without incorporated cities or towns; requires such utilities to file indemnity bonds with the Commission; gives the Commission complete regulatory power over rates, services, routes, and safety of operation. Motor carriers are also required to pay fees based upon either their seating or carrying capacity. One unique provision, which may prevent many sales at excess prices, requires

the payment to the state of 25% of the purchase price over and above the value of the physical properties and going value.

The Florida Act^{36a} also gives its Commission jurisdiction over passengers and freight motor carriers. The provisions include the power to grant certificates of convenience and necessity and to revoke, alter or amend them, requires its consent to their transfer, empowers it to establish the amount of liability bonds and generally regulate services, rates, safety, accounts and reports.

Arkansas was but one of a number of states amending their motor carrier regulatory statutes. The 1929³⁷ amendments conferred upon the Commission authority to regulate intra-city motor carrier operations, whereas the 1927 act had limited its regulatory authority to operations between cities and towns. In addition the Commission was also given wide rate-making authority and all surety bonds must now be satisfactory to the Commission; the 1927 Act had specified the amount of liability bonds to be filed by each carrier. The Missouri statutes regulating motor carriers were amended³⁸ to subject all interstate operators to the same regulations as to size, weight, speed, carrying capacity and license fees as are intrastate operators. In addition interstate operators must secure a permit from the Commission and must file a liability insurance bond. While the latter requirement may be constitutional, the service and equipment regulations are doubtful.

The power of the Texas Railroad Commission over motor carriers was extended to carriers engaged in the trans-

^{36a}Florida, S. B. No. 87, effective July 1, 1929.

³⁷Arkansas, Acts 1929, Act 62, amending Act 99, 1927.

³⁸Missouri, Laws 1929, p. 340, adding sections 6a-6d to Laws 1927, p. 408.

³⁵New Mexico, Laws 1929, C. 129.

³⁶Tennessee, P. A. 1929, C. 58.

portation of freight operating between incorporated towns.³⁹ The 1927 Act had limited the jurisdiction of the Commission to passenger busses. The Commission was given authority to establish minimum and maximum charges, grant certificates of convenience and necessity, regulate services and schedules and the act also provided for the payment of fees and the filing of indemnity bonds. The Iowa Board of Railroad Commissioners was given authority⁴⁰ to regulate motor trucks not operating between fixed termini or over a regular route. The powers conferred include the elements of control possessed by the Commission over other motor carriers and railroads. In Oregon contract as well as commercial carriers, unless operating exclusively within the corporate limits of cities or towns, have been placed under commission control but no authority is vested to compel such carriers to become common carriers.⁴¹

The other changes included the placing of taxicabs under the jurisdiction of the Nebraska Street Railway Commission,⁴² the extension of control by the Idaho Public Utilities Commission,⁴³ elimination of all motor carriers but auto trucks from the Auto Stage and Truck Transportation Act by the California Legislature,⁴⁴ the requirement that motor carriers receive the consent of the Wisconsin Commission before abandon-

ing operations,⁴⁵ and the taxation of interstate motor carriers by the state of Wyoming.⁴⁶

Grant of Additional Powers to Railroads

A few states conferred additional privileges upon railroad corporations. Michigan,⁴⁷ Wisconsin,⁴⁸ Illinois,⁴⁹ and Iowa⁵⁰ granted authority to railroads to own and operate aircraft and motor carriers as common carriers or acquire the securities of such corporations.

A Missouri Act⁵¹ empowered railroads to acquire and operate motor carriers and aircraft, while Nevada⁵² permitted the ownership and operation of motor carriers directly or through a subsidiary. An act giving railroads power to purchase the securities of express companies was adopted by Massachusetts⁵³ and Michigan;⁵⁴ Wisconsin⁵⁵ and Illinois⁵⁶ permitted them to guarantee the bonds and other obligations of such corporations of which they are stockholders. In addition, a Maine Law⁵⁷ provides that no title to any real estate or any interest therein shall be acquired against any railroad corporation by adverse possession, however exclusive or long continued.

Water Power

The most comprehensive act passed during 1929 regulating water power was

³⁹ Texas, Laws 1929, C. 314.

⁴⁰ Iowa, Laws 1929, C. 129.

⁴¹ Oregon, Laws 1929, C. 394.

⁴² Nebraska, Laws 1929, C. 147.

⁴³ Idaho, Laws 1929, C. 267, p. 614.

⁴⁴ California, Stat. 1929, C. 863, amending Stat. 1919, C. 213. For regulation of passenger carriers, unchanged in 1929, see sec. 501-4 of the P. U. Act.

⁴⁵ Wisconsin, Laws 1929, C. 213, amending Wis. Stat. 1927, sec. 194.02.

⁴⁶ Wyoming, Laws 1929, C. 124.

⁴⁷ Michigan, P. A. 1929, No. 193.

⁴⁸ Wisconsin, Laws 1929, C. 201.

⁴⁹ Illinois, Laws 1929, p. 590.

⁵⁰ Iowa, Acts 1929, C. 133, adding sec. 7945-c1 of C. 370 to the 1927 Code.

⁵¹ Missouri, Laws 1929, p. 345.

⁵² Nevada, Stat. 1928-29, C. 94.

⁵³ Massachusetts, Acts 1929, C. 76, amended G. L. 1921, C. 160, sec. 70. The organization of the Railway Express Agency, Inc., was responsible for this enactment.

⁵⁴ Michigan, P. A. 1929, No. 240.

⁵⁵ Wisconsin, Laws 1929, C. 203. The Illinois and Wisconsin laws are similar in character and more limited in scope than the Michigan Act.

⁵⁶ Illinois, Laws 1929, p. 591.

⁵⁷ Maine, Laws 1929, C. 259.

that adopted by the West Virginia Legislature.⁵⁸ The regulatory powers conferred upon the Public Service Commission include the granting of licenses to corporations or municipalities for hydro-electric development, naming the governor as a member of the Commission for for the purposes of the act, and limiting licenses to a period of 50 years, after which such licenses may be extended for another such period or part thereof. Licenses thereafter shall have indeterminate character until terminated by purchase or due process of law. The act further provides for revocation and amendment of licenses and for municipal and state purchase of hydro-electric plants in addition to a number of other general provisions.

Other water power acts included one passed by the state of Idaho,⁵⁹ granting to its Commissioners of Reclamation, power over the use of water for power purposes, a Washington statute⁶⁰ requiring the payment of license fees for the use of water for power purposes; and a Pennsylvania law requiring that water power companies must receive the consent of the Public Service Commission before extending their operations.

Municipal Regulation, Acquisition and Operation

After a long contest the amendment of the provisions in the Massachusetts statutes relating to the acquisition of lighting plants by municipalities was finally enacted. Under the 1929 law,⁶¹ a municipality may purchase existing plants if such a plant exists at the time of the first vote in favor of municipal operation. In the event of disagreement

as to the purchase price following negotiations with the existing utility, appeal may be taken to the Department of Public Utilities which shall determine the property to be purchased as well as the price. Either the utility or municipality may then reject the Commission decision. In the event the city does so, all prior proceedings for municipal acquisition are rendered void. Should the utility reject, the municipality may then proceed to construct its own plant without further negotiations with the utility.

A Nebraska act⁶² made new provisions for the organization of electric light and power districts, providing for the development, purchase, sale and transmission of electrical energy for light, heat and power purposes. Additional powers were also conferred upon municipalities⁶³ to sell electric and water service outside their corporate limits, and to construct rural transmission lines for a distance of 15 miles beyond their corporate limits.

Municipalities are given authority⁶⁴ to grant non-exclusive franchises for a period not exceeding 10 years to bus and motor transportation lines to carry passengers. Where a street railway is in operation in any municipality, such franchise must first be tendered to it. In the event of refusal, the grant may be tendered to others subject to popular approval.

A group of laws passed by the 1929 session of the Illinois Legislature relating to the regulation of public utilities are commonly known as the Chicago Traction Settlement Laws. These bills included a terminable permit act,⁶⁵ a bill⁶⁶ providing for the creation of a local

⁵⁸ West Virginia, Laws 1929, C. 58, p. 215.

⁵⁹ Idaho, Laws 1929, C. 212.

⁶⁰ Washington, Laws 1929, C. 105, p. 205.

⁶¹ Massachusetts, Acts 1929, C. 379, amending G. L. 1921, C. 164, secs. 42ff.

⁶² Nebraska, Laws 1929, C. 104, p. 377, repealing Laws 1927, C. 108.

⁶³ Nebraska, Laws 1929, C. 43.

⁶⁴ Iowa, Laws 1929, C. 173.

⁶⁵ Illinois, Laws 1929, p. 271.

⁶⁶ Illinois, Laws 1929, p. 581.

or metropolitan transit commission, an act⁶⁷ authorizing corporations to operate unified local transportation systems combining railroads and street railways and may also include motor vehicles or other transportation facilities. Other bills removed the restrictions upon municipalities granting franchises for a period of only 20 years to electric railroads;⁶⁸ municipalities were given power to construct subways;⁶⁹ and the requirement that the consent of abutting property owners for the construction of railroad tracts was removed, where the tracks were to be constructed in a subway.⁷⁰

Of these laws those providing for the granting of terminable permits and the creation of the local transportation district deserve separate consideration. The terminable permit bill enables any city in the state to grant such permits to motor carriers, street or elevated railroads. The law differs considerably from the provisions of similar laws in other states. Such vital clauses as those providing for termination by mis-user and non-user, and amendment, alteration and revocation are noticeably absent from the bill. Grants under this law are in danger of being perpetual in character based upon Professor Stason's statement that the terminable permit "differs from the perpetual franchise by being subject to amendment, alteration, revocation and termination by purchase."⁷¹ It is interesting to note that the Senate Committee just two years earlier, investigating terminable permits, recommended the inclusion of a provision for termination by mis-user and non-user.

It has been charged that under the new laws municipalities are given insuf-

ficient power to enforce franchise provisions relating to service, extensions, rates or valuation for municipal purchase purposes. Some doubt has also been expressed as to the constitutionality of the act in view of the absence of a revocation clause, thereby conflicting with Sec. 14 of Art. 2⁷² of the state Constitution.

The law creating a local transportation commission, which is applicable to cities of 500,000 or more, is not to be effective until such municipality provides for the establishment of a comprehensive unified local transportation system. The constitutionality of this law has also been attacked in view of the fact that the new commission, appointed by the mayor of such city, is to regulate transportation services and facilities for a distance of 30 miles beyond the territory of such municipality.

Miscellaneous Legislation

Among the miscellaneous laws worthy of note is a Wisconsin law⁷³ requiring that public utilities keep separate accounts to show profits or losses in the sale of merchandise and that such profits or losses are not to be taken into consideration in arriving at rates. A Missouri act⁷⁴ reduces minimum fees in security-issue cases from \$250 to \$25 and Washington now requires all utilities to pay an annual fee of 1/10 of 1% upon their gross operating revenue, replacing a former act which provided for specific graduated fees.⁷⁴

⁷¹ E. Blythe Stason, "The Indeterminate Permit for Public Utilities," (1927) 25 *Mich. Law Review*, 354, 355.

⁷² No . . . law . . . making any irrevocable grant of special privileges or immunities shall be passed.

⁷³ Wisconsin, Laws 1929, C. 384, adding sec. 196.635 to Wis. Stat. 1927.

⁷⁴ Missouri, Laws 1929, p. 341, amending sec. 10430, G. L. 1919.

⁷⁵ Washington, Laws 1929, C. 107, p. 209, amending sec. 10417 of Remington Code.

⁶⁷ Illinois, Laws 1929, p. 289.

⁶⁸ Illinois, Laws 1929, p. 255, amending sec. 24 of Act of Apr. 10, 1872. Laws 1929, p. 264.

⁶⁹ Illinois, Laws 1929, p. 268.

⁷⁰ Illinois, Laws 1929, p. 255, amending sec. 24 of Act of Apr. 10, 1872.

Defeated Legislation

A great many bills, for better or worse, went down to defeat in the legislative gristmills during the year. In addition, the Governor of Missouri vetoed an indeterminate permit law, and the people of Maine defeated at a referendum the widely discussed and much contested export power bill.

Among other bills of importance de-

feated, the Indiana Legislature threw out one providing for regulation of holding companies. Texas and Kentucky refused to adopt bills giving their Railroad Commissions power to regulate gas, water, electric, light and power utilities. The New York St. Lawrence water power project was thrown out and the program of the Wisconsin League of Municipalities was also lost.

HARRY R. BOOTH.

 COMMENTS ON CONTROL OF URBAN DEVELOPMENT

THE following comments occurred to the writer after reading Mr. Coleman Woodbury's extremely interesting paper on "Some Suggested Changes in the Control of Urban Development" in the August issue of the *Journal*.

The Regulation of Cul-de-Sac Streets. I entirely agree with Mr. Woodbury that such dead-end streets should not be prohibited, but should, in fact, be encouraged for the strictly local service streets in residential development. Many recent subdivision platting rules are drawn on this principle, requiring only that where cul-de-sacs are used adequate Y's or turn-arounds be provided at the inner end. Further, many of the better subdivisions now utilize cul-de-sacs of one sort or another.

Increasing Block Lengths. I agree that the old limitations of 660 or 800 feet should be abandoned and longer blocks permitted, especially in the direction of the principal traffic flow. A number of more recent subdivision control ordinances, e. g., Kalamazoo, Michigan, permit block lengths up to 1300 feet. For ordinary subdivision platting, i. e., where no comprehensive development plan for large tracts, as at Radburn, is

possible, block lengths should not in my opinion exceed this figure. To follow this principle further, platting rules might very well prohibit openings by cross streets into the most important major arteries at distances of less than 660 feet or even 800 or 1200 feet.

Provisions for Group-House Construction. Most zoning ordinances are drafted to permit such construction, even though this is not always realized. Under the definition of a building as a structure having a roof supported by uprights or walls and *separated from every other building by at least a party wall*, and under the Intensity of Use of Lot Regulations, which usually read, "No dwelling or group of dwellings," group-house building would be permitted. I am not convinced that the economies to be effected by group-house construction justify the disadvantage of lack of privacy and loss of family pride in individual ownership and maintenance.

Classification of Recorded Lots. The suggestion made in this section is a very interesting one. The schedule for classification probably needs some revision, as Mr. Woodbury points out, but it seems to me essentially sound. However, if paragraph (3) be revised, as

I believe it should be, to read, "The lot to be within the service limits of the following utilities; i. e., it shall be so located that *public utilities may be readily extended for the service of any lot*;" and if the list of such service is expanded to include water supply and sewerage as well as electricity and gas, it is my opinion that only such subdivisions as can meet requirements (1), (2), and (3) should be allowed to be put on the market. That is, only properties of Classes A and B should, in principle, be opened for sale. This suggests what seems to me the only feasible means of successfully controlling the subdivision of land, namely, providing under legal enactments that only such subdivisions as will fall in Classes A and B shall be entitled to a permit for the sale of lots.

In addition to such a regulation, it seems to me essential for the solution of the subdivision problem that a board be legally set up with authority to permit the subdivision and sale of lots only where there is some justification for such sale on the basis of present or prospective need.

I realize how difficult such control would be, but something of a precedent is established in the present requirements for certificates of convenience and necessity in building public service and transportation facilities. Certainly the economic waste is greater and the public interest more vital in the matter of the tremendous oversupply of platted lots during boom periods than in the matter of prohibiting the overlapping of public services.

JACOB L. CRANE, JR.

MR. WOODBURY'S COMMENTS

MR. CRANE'S comments on all four suggestions made in my article are not only welcomed but are recommended to the careful consideration of every person interested in the problems. On the last two points additional statements, in the form of explanation rather than of argument, seem called for.

Provisions for Group-House Construction. Mr. Crane's statement is correct but evidently my proposal was not quite clear to him. Present ordinances, drawn as he points out, do allow group houses but they are, in most cases, confined to apartment house districts where, of course, land values are based on the possibility of apartment house use. This tends to forestall the economies of group housing. I would like to see residence districts set aside with the maximum intensity of use that of group housing rather than the greater intensity of apartment use. The construction and

maintenance economies of group houses then would not be decreased nor wiped out by large advances in land values.

Classification of Recorded Lots. I am glad that Mr. Crane has stated the possibilities of requiring evidence of need for subdivision land before plans are accepted for record or, at least, requiring that improvements be installed. The former seems to me superior to the latter. Merely requiring the installation of improvements probably would cut down the amount of subdividing but it would also, in all probability, concentrate the control of subdividing in the hands of a relatively few financially powerful groups. That the prospective buyer would benefit by such a change is an assumption which cannot be accepted in an off-hand manner.

The possible advantage of my proposal over Mr. Crane's "convenience and necessity" permit is the chance of a more favorable reception by the courts.

I realize that the prediction of the attitude of the courts is hazardous, if not rash, but whereas my suggestion would merely force publicity of pertinent facts, Mr. Crane's amounts to declaring that subdividing is a public utility service.

The slowness of the courts to extend this classification is well known. In addition, the difficulty of obtaining qualified members for such a board or commission would be a serious one.

COLEMAN WOODBURY.

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BOOK REVIEWS

Guérard, Albert. *L'AVENIR DE PARIS*.
Paris: Payot, 1929, pp. 366.

"At last," one is tempted to exclaim, "the long-awaited reconciliation of the technique of city planning with good taste, common sense and a balance between the traditions of the past and a sense of the needs and tendencies of the present."

Professor Guérard is not a professional city planner. He is the author of "Reflections on the Napoleonic Legend", a striking analysis of the influence of luck upon the career of the Corsican, of "French Prophets of Yesterday", and of a three-volume history of French civilization. And he occupies the chair of the latter subject at Leland Stanford. To some, such versatility may indicate *ipso facto* a superficial, second-hand synthesis of the subject; to others, a different line of thought may suggest itself on dipping into the book. Here is a man steeped in the history, the traditions, the habits and the wishes of the Parisian, and at the same time in contact with some of the most phenomenal civic growths in the United States. Out of a synthesis of this knowledge he makes his diagnosis and his prescription, calling in as adjuncts available technical information in the fields of engineering, transportation and the like—a method of approach for which perhaps a good deal can be said, novel though it may seem on this side of the Atlantic.

The first third of the book is devoted principally to aesthetic and cultural values. Although Professor Guérard here discusses problems radically different from those confronting any American city, he says many things which are very apt. Thus he analyzes at length the important but often neglected problem of

proportion between the dimensions of streets, squares, and public places, on the one hand, and of the monuments in, and the facades fronting upon them, on the other. One entire chapter emphasizes the need of trees along avenues and broad places and their proper placement. To anyone who has passed rapidly from Paris to Munich, the difference between a *place* which invites lingering and a *platz* consisting of a treeless waste of cobblestones is painfully evident. Professor Guérard speculates *passim* upon the American dislike of trees—a dislike which apparently is one of the few points of sympathy between the city planner and the retail merchant. The fetish of the street sign, of course, is largely responsible for this point of view, not to speak of the disinclination of city fathers to lavish care upon voteless organisms. But a psychologist of the primitive-instincts school might attribute this attitude to a hidden impulse inherited from the pioneer Americans who with vast effort cleared the forests from the great plains.

Height limitation is naturally a closely allied topic. Professor Guérard regrets even the 66-foot limit in the old, monumental, central district of Paris; he would like to see the limit reduced to permit only four stories. Such firm opposition to existing tendencies will rejoice the hearts of the fundamentalists among our own limitationists; one can see them preparing to quote these staunch words at the first opportunity. Yet in a later chapter this recruit so encouraging in his orthodoxy, apostatizes and lays out whole areas of the newer residential parts of Paris to be zoned for skyscrapers.

It is only fair to note that in this matter of zoning Paris Professor Guérard

assumes greater freedom from legal restrictions than can as yet be obtained under American ordinances based on the police power. Thus he outlines a law which not only restricts "non-conforming uses" to existing establishments but which actually abolishes them within a specified period. Again, he proposes drastic limitation wherever the symmetry of roof-line from the Place de l'Étoile might be impaired but would allow corresponding increases in height as the ground slopes away from this spot. It is indeed doubtful whether American courts would uphold such discrimination between adjacent properties for purely aesthetic reasons.

A shrewd chapter is devoted to "prophyllactic measures" regulating the plethora of public statuary. Perhaps the most ingenious suggestion put forward is to ban from reproduction in bronze the frock coat and the high hat. Since few of today's statesmen or scientists would care to emulate the 18th century and suffer perpetuation in classic toga or the nude, such a regulation would automatically limit the commemoration of existing and future notables to the comparatively mild form of the bust or the medallion. But it would also rule out St. Gaudens' Lincoln.

Style and scale are matters of prime importance to Professor Guérard. As to style, he suggests fairly close conformity with existing standards in the old and established centers with ample latitude for the modern and the majestic in outlying regions, this to apply to public as well as private buildings. "All styles are good except the Beaux Arts style.

. . . which, like the influence of a movie sheik over the drug-store cowboys, has spread all over the world . . . It has corrupted virgin America and blares forth alike in Rio de Janeiro and Buenos Aires. . . . In New York the

Public Library, the Grand Central Station, and the Metropolitan Museum are notable specimens, correct and impressive. But the station could be a museum and the museum could be a library."

As to scale, Professor Guérard shows the same characteristic spirit of discrimination. He appreciates magnificent vistas and show points like the Champs Élysées; in fact he pleads for several more of them. But he also recognizes that there are places where a little square is apter than a big one—notably so, he contends, before the old Gothic churches both because of convenience, scale, and the intimate association of these Churches with the old crowded life of their parishes. Unique indeed among books having to do with city planning is the omission of Burnham's oft-quoted exordium, "Make no little plans, they have no power, etc."—advice which Burnham's followers have sometimes seemed to take so literally as to concentrate upon the majestic avenue, the great rotunda, and the "civic center" to the neglect of all those little improvements—an arcade here, a parkway there, a fine thing preserved,¹ an ugly bit transformed—specific things which Professor Guérard, with a lover's eye, is everywhere throughout his book suggesting as concrete applications of his general principles.

Yet Professor Guérard is no mere antiquary. He has two coordinated objects: to save old Paris by spreading all Paris out; overcome the artificial limitations of the old fortifications by stimulating

¹ Marble palaces are constantly springing up in Washington to house government bureaus, national organizations, etc. Yet city planning there failed to save the handsome historic Adams house despite the fact that it would have afforded a dignified home for any such body and despite the fact that its replacement by a conventional, high commercial building distinctly impairs the appearance of Lafayette Square, the front yard of the White House.

the broad growth of "model" residential and industrial districts. The annexationist policy of Los Angeles, whatever its extravagances, he considers a stimulating example. He discusses in detail the problems of transportation, zoning, etc., which are involved. He strongly favors the project of Paris-as-a-Seaport and launches an effective attack upon its opponents which will delight any one who has followed Chicago's struggles to the same end.

Professor Guérard closes with a brief but pungent discussion of the political reorganization of Greater Paris. The greatest difficulty at present is the election of aldermen by wards, leading to a disastrous neglect of the interests and progress of the city as a whole. His remedy is taken from metropolitan London—a council elected at large (*scrutin de liste*) with additional co-opted members to control schools, transportation and the other great public services, *plus* local councils for the different wards of old Paris and for the suburban towns (analogous to the boroughs of London).

His proposed executive is more questionable. First, he believes in a great measure of autonomy for the different technical services with an administrative committee for each composed of representatives of the city, of the state, of the administrative, and of the operating personnel—the last a scheme strongly favored by a school of French political writers, reflected in English by H. J. Laski, and adopted in the reorganization of the Belgian State Railways. To the more "hard-boiled" among our municipal reformers the objections will cry aloud. Professor Guérard rejects the commission form of city government because of lack of leadership, yet above these semi-autonomous services he would put only a governor-general, admittedly primarily a gorgeous figure-

head like the Lord Mayor of London, albeit with dictatorial powers in reserve in case of emergency.

M. Paul Bouju, Prefect of the Seine, writes an introduction in which, with a frankness as engaging as it is rare in official personages, he admits that he has not yet had time to read his good friend's manuscript.

Lovers of Paris, and lovers of the pungent, the ironic, the allusive, the *spirituelle* treatment of a solid subject will take this book to their hearts, whatever their interest in its formal matter. Among many passages which one could well extract, the chapter on "Le Trottoir" (sidewalk) will find a place in any anthology that may ever be made on the joys and sorrows of city life.

The author contributed a summary of the views expressed in the book to the *Atlantic Monthly* for July, 1929.

GRAHAM ALDIS.

Groninger, Taylor E. PUBLIC UTILITY RATE-MAKING. *Indianapolis: Bobbs-Merrill Company, 1928. pp. xxi, 381. \$7.50.*

THE preparation of a rate case for hearing before a state public utility commission or before a court requires a knowledge of the rules of law applicable to rate-making and an adequate determination of all relevant facts. The court acts only on the facts presented and the utility's attorneys are usually prepared to present facts which prove something. In contrast, the evidence introduced on behalf of the public is often quite incompetent and proves nothing. As a result the public's case is often ineffectively presented.

The author believes that the regulatory bodies and municipalities of this country need to be aroused to this situation and to the importance of presenting expert, probative testimony at rate hearings. In preparing this outline

on "Public Utility Rate-Making and Court Review of Rate Orders," he has analyzed the court's position on each of the many controversial questions involved, in order that the interested attorney, particularly the attorney for the public, may find direct help in preparing his case. The book, therefore, is very largely a study of public utility regulation from the legal point of view.

The first five chapters concern themselves with the growth of rate regulation by public authority, the limitations of this power, the relation between the public service company and its customers, and the municipality's responsibility in rate-making.

The sixth chapter on the "Rate Base" is perhaps the most important contribution of the book. Recognizing that the rate base is the "storm center" in every rate case, the author has devoted about one-third of his book to a careful analysis of the Supreme Court's attitude on fair value. Pertinent passages from leading cases are cited. In particular, the Supreme Court's attitude on "reproduction cost" is analyzed. Emphasis is laid on the fact that reproduction cost is not always the only, nor even the dominating, determinant of fair value. It is one of the important elements in such determination, and therefore should be determined with as much skill and presented with as much forcefulness by the representatives of the public as by the experts of the utility. While the utility has no constitutional right to have its rates based upon any particular method of valuation, the finding of the rate base will rest on the evidence introduced into the record and such evidence will not be disregarded by the courts and can not be arbitrarily disregarded by the commissions. Where a clear, logical and forceful case for reproduction cost is presented by the utility, the evidence

must be considered by the commission, and the court will not permit a commission arbitrarily to disregard such evidence. Hence, where little or no probative evidence to the contrary is submitted by the representatives of the public, the reproduction cost exhibit may well become the dominating evidence in the decision of the rate base.

The author believes that the policy of many utilities of thus insisting upon reproduction cost as the dominant element in the determination of fair value is a short-sighted policy in view of the possibility of a long period of declining prices. He might well have noted, however, that the past decade has presented an attractive combination of high property valuations and low interest rates, a combination with possibilities for trading on the equity and financing consolidations too potent to resist. While this policy may prove embarrassing in the future to some public utility lawyers who are now emphasizing reproduction cost, there is little, if anything, in the past record of Supreme Court decisions to indicate that the Court will take the position in the future that either reproduction cost, or investment cost, and that alone, will be considered fair value for rate-making. While the present policy of the utilities may be short-sighted, it is well to point out that the case is not proved by reference to the Supreme Court's attitude on fair value.

The chapters on "Rate of Return" and "Rate Base Appraisals" are descriptive of what the lawyer should understand about such matters. The author did not choose to balance his very informative chapter on the rate base with an equally informative discussion of the rate of return.

Chapter 10 contains a discussion of the constitutional limitations applying

to rate orders of the commission. Chapter 11 is concerned with an analysis of the 4% (old 4½% license) contract existing between the American Telephone and Telegraph Company and its associated companies. In Chapter 12, entitled "Smyth v. Ames is Fraught with Grief," the author gives an able discussion of the difficulties involved in determining fair value in accordance with this decision. He cites a number of valuation cases, giving costs involved and time consumed in their preparation, and points out a number of reasons for holding reproduction cost as an unsound basis for fair value. As a remedy for the delay, expense, and confusion, "incident to the present fair value rule," he would adopt "prudent investment as the basis of value" and make "the rate of return the only variable."

The last chapter is a valuable dis-

cussion of the review of rate orders by the courts. The appendices cover the principal points brought out in the O'Fallon Case, before the Commission and lower court, the Indianapolis Water Case, and various rules to be observed in preparation of record and transcript on appeal, as well as the revised rules of the Supreme Court of the United States. The book is well indexed and contains an alphabetical list of authorities cited.

Mr. Groninger has performed a worthwhile service in bringing together in a concise and informative way those decisions of the United States Supreme Court which may be taken as guide posts in the determination of fair value. The book will be found useful by the legal representatives of both the utilities and the public in preparation of rate-making cases.

PAUL J. RAVER

BOOK NOTICES

Hotchkiss, Henry G. *A TREATISE ON AVIATION LAW*. New York: Baker, Voorhis & Co., 1928. pp. xxviii, 492. \$7.50.

The main purpose of this book, as clearly stated by the author in the preface, is "to indicate the scope and trend of statutes and regulations, particularly at the present time, and to record existing judicial decisions that relate to aviation." Hence, nearly 400 pages are devoted to conventions, statutes, regulations, and Department of Commerce forms. The secondary purpose is "to suggest a few of the questions that today are unsolved, and to point out possible ways of answering some of them." To accomplish this, the author devotes 100 pages to 14 chapters dealing with air history and problems.

The author deals with "aviation law" or "law of air navigation" (*Luftfahrrecht* or *Droit aeronautique*) rather than with all the subjects that might be included under the head of air law (*Luftrecht* or *Droit arien*). But most texts on air law deal only with the law of air navigation. This one strictly identifies the subject and content.

The text material states, in a broad way, the essential problems confronting the aircraft companies and the public generally. It includes a discussion of proprietary rights in airspace, tort liability, the relation of aviation to insurance, workmen's compensation, common carriers, admiralty, patent law, and criminal law.

The appendices contain the CINA Convention of 1919, the Pan-American Convention of 1928, the federal and state statutory provisions. This material will be found very useful to those who lack a rather full collection of the various regulations.

FRED D. FAGG, JR.

Sée, Henri. *MODERN CAPITALISM*. New York: Adelphi Co., 1928. pp. xvi, 215. \$3.50.

The subtitle of Professor Sée's "Modern Capitalism: Its Origin and Evolution" gives us the key to the author's treatment. The book is an historical account of the evolution of modern capitalism, or as Professor Sée

himself says, "an essay of synthesis and comparative history." It is an analysis of movements and trends out of which modern capitalism has developed rather than a recital of events leading to the emergence and domination of modern capitalism in the 19th century.

Modern capitalism is characterized by international commerce, by great power centered in the financial houses and by large scale industry. These three elements are referred to by Professor Sée as commercial, financial and industrial capitalism respectively and they emerged in approximately the order named, evolving and interacting to produce capitalistic society as we know it today. Reduced to its barest outlines, Professor Sée's explanation is that commercial activity was of prime importance in the accumulation of capital, which in turn gave rise to the necessity for greater orderliness and facility in handling funds. Then out of the materials lent by commercial and financial capitalism industrial capitalism built its structure and the synthesis of the three is modern capitalism. The emphasis throughout the book is on the *evolutionary* nature of modern capitalism.

The book is a brilliant piece of synthetic analysis. In spite of the overwhelming mass of material from which this exposition is drawn Professor Sée has succeeded in subordinating the details to the trend of the movement he is tracing. This is the quality which makes the book so very readable without loss of scientific accuracy. But "Modern Capitalism" belongs quite clearly to the field of economic history. It is an exposition of *how* modern capitalism has emerged rather than an analysis of how it has functioned in its various stages. This latter phase of the evolution of modern capitalism has been rather neglected by Professor Sée, and perhaps necessarily so in a volume of 186 pages. Nevertheless, the omission must be regretted by those interested in the so-called institutional approach to economic problems.

HELEN C. MONCHOW.

Voskuil, Walter H. *THE ECONOMICS OF WATER POWER DEVELOPMENT*. Chicago: A. W. Shaw Company, 1928. pp. xii, 225. \$3.00.

The author's framework of economic analysis can be stated in brief compass. In lay discussion of water power development the heavy cost of development is often overlooked. Coupled with the initial investment cost is the question of market. The transmission of electricity in large quantities is limited by the cost of transmission to a range of between 200 and 300 miles. If a potential power market of sufficient size does not exist within the range of transmission, the best of water power sites could not be economically developed. The existence of water power may be a gift of nature, but the utilization of the water power is a great commercial undertaking. Only a small part of the total motive power of the country is derived from water power, the chief portion coming from the utilization of coal.

After the presentation of such principles of water power economy, they are applied to the several well-defined water power areas of the United States. Statistics of both the potential water power and the potential market have been assembled for each section.

Public control of water power has been the outgrowth of a social desire for conservation. Centralization of control over water power development was placed with the Federal Power Commission in 1920. This Commission has helped to clarify the situation surrounding water power development but it has been somewhat undermanned and underfinanced. Public control sometimes takes the form of public ownership instead of regulated private development and several public water power enterprises are discussed.

The text carries an excellent collection of statistical material relating to water power development. The appendix contains more statistical data as well as a selected bibliography classified by geographical sections. The approach is from the standpoint of economic geography and description rather than economic analysis. E. O. MALOTT.

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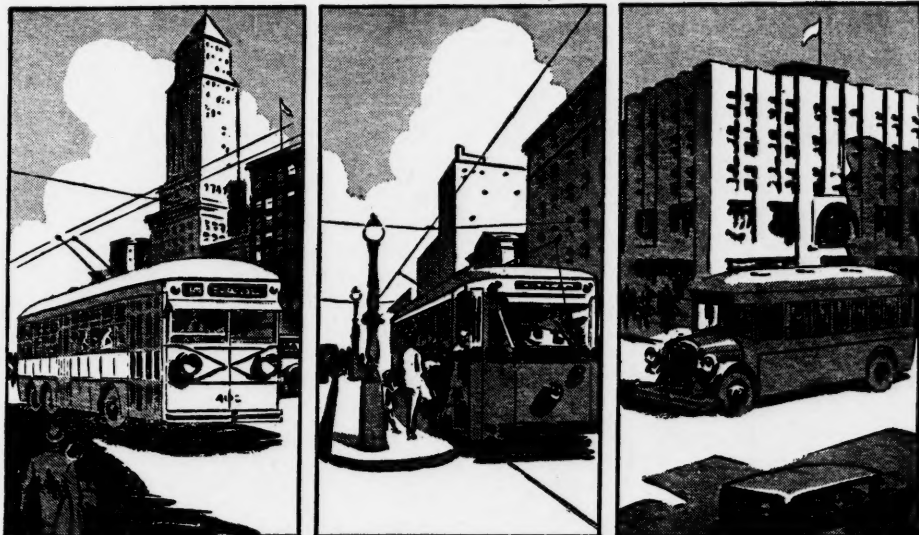
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